



First Five-Year Review Report

for

Taylor Road Landfill

Seffner

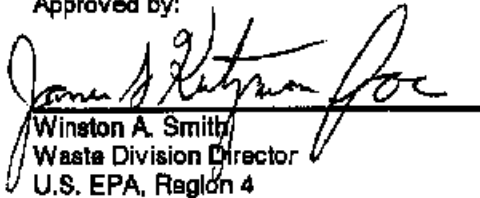
Hillsborough County, Florida

September, 2003

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Five-Year Review Report

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List of Acronyms

1,1-DCE	1,1-dichloroethene
BRA	Baseline Risk Assessment
CFR	Code of Federal Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cis 1,2-DCE	cis 1,2-dichloroethene
COPC	contaminant of potential concern
EPA	United States Environmental Protection Agency
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
ft	foot/feet
FS	Feasibility Study
mg/L	milligrams per liter
MSL	mean sea level
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PCE	tetrachloroethene
PRP	Potentially Responsible Party
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
RP	Responsible Party
Site	Taylor Road Landfill Superfund Site
SWMD	Solid Waste Management Department
TCE	trichloroethene
U.S.	United States
ug/L	micrograms per liter
umhos/cm	micromhos per centimeter
VOC	volatile organic compound

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Executive Summary

The purpose of the Five-Year Review of the Taylor Road Landfill Superfund Site (the Site) is to evaluate the implementation and performance of the remedy selected as the final action to respond to risks associated with potential exposure to contaminated ground water in the Floridan aquifer that is present beneath or is attributable to the Site. The methods, findings, and conclusions of this evaluation are documented in this Five-Year Review Report. A determination is made as to whether the remedy is protective of human health and the environment based on the data and observations evaluated during the Five-Year Review. In addition, this Five-Year Review report identifies issues found during the review, and includes recommendations to address them. This statutory Five-Year Review was performed by EPA with the support of the Florida Department of Environmental Protection.

The Record of Decision for Taylor Road Landfill was signed on September 29, 1995, and selected Alternative 3, Collect and Treat Ground Water at Property Boundary on a Contingent Basis, as the remedy for the Site. The major components of this remedy include: institutional controls, extension of water lines and monitoring, and natural attenuation with contingent corrective action. In the Record of Decision, the Florida Primary and Secondary Standards and Minimum Criteria were established as the remediation levels for ground water, and the point of compliance was set as a ring of monitoring wells encircling the three landfills. An Explanation of Significant Difference was issued by EPA in August 2000 to remove Florida Secondary Drinking Water Standards from the federally-enforceable applicable, or relevant and appropriate requirements for this action. The Florida Department of Environmental Protection did not concur with EPA's change to the Record of Decision.

During the records and data review, site inspection, and interview process, a number of issues were identified relative to implementation of the remedy at the Site. These issues include: (1) Site access security (monitoring & maintenance of fences); (2) Ground water monitoring well maintenance; (3) Potential for un-permitted potable well installation in adjoining properties; (4) Operations & maintenance of landfill caps, leachate collection, gas collection and storm water management systems under RCRA; (5) Annual reporting for Ground Water Quality Statistical Evaluations; (6) Ground water quality concerns (mercury, oil & grease, and pH) of adjoining land owners should be affirmatively addressed; (7) Quantitative measurement and tracking of fill activities in landfill cap settlement areas; and, (8) Monitoring/ evaluation of potential environmental impacts from adjacent properties (commercial activities and dumping) should be performed.

Community involvement activities associated with the Five-Year Review include publication of a legal notice at the start of the Five-Year Review process, contacts and interviews with citizens/community groups identified in the Community Relations Plan, and issuance of a Fact Sheet and second legal notice upon completion of the Five-Year Review. Legal notices are published in the Tampa Tribune, and Fact Sheets will be sent to the Site mailing list and placed in the Information Repository. An inspection of the Information Repository, maintained at the

Thonotosassa Public Library on 10715 Maion St., Thonotosassa, FL 33592, indicates that the site file is up-to-date and readily accessible. Interviews with citizens and community groups indicate that there is an ongoing level of concern about the Site, but the remedy and its implementation by Hillsborough County are generally addressing these concerns.

The remedy at the Taylor Road Landfill currently protects human health and the environment because ground water monitoring at the compliance ring ensures contingent measures can be taken prior to impacts to domestic supply wells, institutional controls restrict the installation of new domestic supply wells in the impacted area, post-closure care of the landfills under RCRA minimizes ongoing impacts to the aquifer, and natural attenuation is demonstrated to be occurring. However, in order for the remedy to remain protective in the long-term, the following actions need to be taken to address issues identified during the Five-Year Review: repair fencing and improve enforcement of site access controls; improve routine maintenance of monitoring wells; perform a potable well survey in the vicinity of the site to ensure institutional controls are effective; ensure the long-term operation and maintenance of the landfills; resume annual ground water quality statistical evaluations; and, improve responsiveness to ongoing community concerns. Hillsborough County began implementing these actions following completion of the Five-Year review site inspection.

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Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name (from WasteLAN): Taylor Road Landfill		
EPA ID (from WasteLAN): FLD980494959		
Region: 4	State: FL	City/County: Seffner/Hillsborough
SITE STATUS		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify) _____		
Remediation status (choose all that apply): <input type="checkbox"/> Under Construction <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete		
Multiple OUs*: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Construction completion date: <u>06</u> / <u>18</u> / <u>1998</u>	
Has site been put into reuse? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
REVIEW STATUS		
Lead agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency _____		
Author name: William D. Keefer		
Author title: RPM	Author affiliation: EPA Region4	
Review period:** <u>06</u> / <u>28</u> / <u>2003</u> to <u>08</u> / <u>31</u> / <u>2003</u>		
Date(s) of site inspection: <u>06</u> / <u>19-20</u> / <u>2003</u>		
Type of review: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input checked="" type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead </div> <input type="checkbox"/> Regional Discretion		
Review number: <input checked="" type="checkbox"/> 1 (first) <input type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify) _____		
Triggering action: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input type="checkbox"/> Actual RA Onsite Construction at OU # _____ <input checked="" type="checkbox"/> Actual RA Start at OU# <u>00</u> </div> <input type="checkbox"/> Construction Completion <input type="checkbox"/> Previous Five-Year Review Report <input type="checkbox"/> Other (specify) _____		
Triggering action date (from WasteLAN): <u>08</u> / <u>11</u> / <u>1998</u>		
Due date (five years after triggering action date): <u>08</u> / <u>11</u> / <u>2003</u>		

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Issues:

The following issues were identified during the Five-Year Review: (1) Site access security (monitoring & maintenance of fences); (2) Ground water monitoring well maintenance; (3) Potential for un-permitted potable well installation in adjoining properties; (4) Operations & maintenance of landfill caps, leachate collection, gas collection and storm water management systems under RCRA; (5) Annual reporting for Ground Water Quality Statistical Evaluations; (6) Ground water quality concerns (mercury, oil & grease, and pH) of adjoining land owners should be affirmatively addressed; (7) Quantitative measurement and tracking of fill activities in landfill cap settlement areas; and, (8) Monitoring/evaluation of potential environmental impacts from adjacent properties (commercial activities and dumping) should be performed.

Recommendations and Follow-up Actions:

Recommendations and follow-up actions for the identified issues include: (1) Repair cut and damaged fences, and Institute daily perimeter security checks (per 1983 CD); (2) Perform routine maintenance on wells TR2-S and 32D, Refit/replace well NE-23, Refit/replace well F-2, Abandon unused shallow wells, Lock and clearly label all wells, and Add well rehabilitation check to pump repair process; (3) Perform potable well survey on adjacent parcels (approximately 1-mile radius of Site); (4) Consideration of ground water impacts during RCRA permit renewal negotiation; (5) Return to Annual reporting and evaluation of ground water trends; (6) Prepare Fact Sheet presenting results of Five-Year Review and addressing community ground water quality concerns; (7) Perform routine civil surveying of landfill cap surfaces (bi-annual or when significant settlement is observed), and Include quantitative estimate of settlement fill activities (area, thickness and location); and, (8) Inventory products and wastes managed on adjacent or nearby properties, Request notification from FDEP District Office of nearby spills or releases, and Report/cleanup illegal dumping on adjacent properties.

Protectiveness Statement:

The remedy at the Taylor Road Landfill currently protects human health and the environment because ground water monitoring at the compliance ring ensures contingent measures can be taken prior to impacts to domestic supply wells, institutional controls restrict the installation of new domestic supply wells in the impacted area, post-closure care of the landfills under RCRA minimizes ongoing impacts to the aquifer, and natural attenuation is demonstrated to be occurring. However, in order for the remedy to remain protective in the long-term, the following actions need to be taken: repair fencing and improve enforcement of site access controls; improve routine maintenance of monitoring wells; perform a potable well survey in the vicinity of the site to ensure institutional controls are effective; ensure the long-term operation and maintenance of the landfills; resume annual ground water quality statistical evaluations; and, improve responsiveness to ongoing community concerns.

Other Comments:

Overall, Hillsborough County Solid Waste Management Department has done a commendable job of implementing the remedy and integrating RCRA and CERCLA operation and maintenance requirements for the Site. While these follow-up actions, if not implemented, would be expected to have a negative impact on the long-term effectiveness of the remedy, it is expected that Hillsborough County will be responsive to these recommendations. Most of the recommendations and follow-up actions for the Site are being implemented by Hillsborough County based on the debriefing at the conclusion of the site inspection.

Five-Year Review Report

I. Introduction

The purpose of the Five-Year Review of the Taylor Road Landfill Superfund Site (the Site) is to evaluate the implementation and performance of the remedy selected as the final action to respond to risks associated with potential exposure to contaminated ground water in the Floridan aquifer that is present beneath or is attributable to the Site. The methods, findings, and conclusions of this evaluation are documented in this Five-Year Review Report. A determination is made as to whether the remedy is protective of human health and the environment based on the data and observations evaluated during the Five-Year Review. In addition, this Five-Year Review report identifies issues found during the review, and includes recommendations to address them.

The Site is a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Enforcement-lead site, and Hillsborough County, Solid Waste Management Department, is the representative of the responsible parties (RP). Hillsborough County, Solid Waste Management Department, has cooperated during performance of the Five-Year Review, providing site access and other material support as requested. This Five-Year Review has been conducted to meet the statutory requirements of CERCLA §121, the National Contingency Plan (NCP), and specific requirements of the Record of Decision (ROD) for this action.

Specifically, CERCLA §121 states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

The U.S. EPA has interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

This is the first Five-Year Review for the Taylor Road Landfill Superfund Site. The triggering action for this review is the date of the Remedial Action start, as shown in EPA's WasteLAN database: August 11, 1998. As the lead agency, U.S. EPA, Region 4, formed an in-house team consisting of the Remedial Project Manager, Community Involvement Coordinator, and a Senior Hydrogeologist from the Office of Technical Services to conduct the Five-Year Review. The Florida Department of Environmental Protection (FDEP) is the support agency for the Five-Year Review of this Site, and has participated in the planning, site inspection, and review of the draft Five-Year Review report. FDEP support included representatives of both the Hazardous Waste Cleanup Section for Superfund Sites and the Southwest District Office, Resource Conservation and Recovery Act (RCRA) section.

The Taylor Road Landfill Site consists of a single operable unit (OU) that encompasses ground water beneath and contiguous with the Site. The objective of the remedy is to prevent current or future exposure to contaminated ground water through provision of County water to residents and through natural attenuation or active treatment of groundwater should conditions indicate it is necessary. A significant contributing factor to the success of the natural attenuation component of the remedy is the operation and maintenance (O&M) of the closed landfills at the site. While the O&M of the landfills is regulated separately from Superfund under the FDEP RCRA program, the landfill O&M was inspected and evaluated as part of this Five-Year Review to assess its contribution to the long-term effectiveness of the ground water remedy.

II. Site Chronology

The chronology of significant events at the Taylor Road Landfill Superfund Site includes both CERCLA pre-remedial and remedial process milestones, as well as the September 1983 Consent Decree under RCRA that specified requirements for the cap, cover, site drainage, methane gas control, and thirty years of O&M for all three landfills. Table 1 summarizes the chronology of Site events.

Table 1: Chronology of Site Events

Event	Date
Initial discovery of problem or contamination	08/01/1979
Preliminary Assessment	08/01/1980
HRS Package	12/01/1982
Consent Decree - remedial measures implementation under RCRA	7/20/1983
NPL listing	09/08/1983
Site Inspection	11/01/1984
Removal Assessment	09/15/1992
Administrative Order on Consent - groundwater RI/FS	02/01/1993

Table 1: Chronology of Site Events

Event	Date
Remedial Investigation/Feasibility Study complete	09/29/1995
ROD signature	09/29/1995
Administrative Order on Consent	09/18/1996
Administrative Order on Consent	07/11/1997
Consent Decree - ROD/RA	05/11/1998
Remedial design start	02/25/1998
Remedial design complete	08/11/1998
Remedial action start	08/11/1998
Construction completion date	08/18/1999
Explanation of Significant Difference	08/03/2000

III. Background

The Taylor Road Landfill Superfund Site is located in eastern Hillsborough County, Florida, on County-owned property, approximately 7 miles east of Tampa in the Seffner-Thonotosassa area. Interstate 4 borders the site to the south, and Mango Road (State Route 579) borders the site to the west. The County property is 252 acres in size and contains three closed landfills. The 42 acre Taylor Road Landfill is located east of the approximately 10 acre Florida Department of Transportation (FDOT) Borrow Pit Landfill and southeast of the 64 acre Hillsborough Heights Landfill. Only the Taylor Road Landfill is on the National Priorities List (NPL). Despite this fact, groundwater contamination has moved well beyond the boundaries of the Taylor Road Landfill. Accordingly, the two adjacent landfills have been evaluated to determine if they are contributing to groundwater contamination. Also located within the 252 acres of County property are five stormwater detention basins, County maintenance facilities, and a community recycling collection center/refuse collection area. The entire 252 acres of County property, containing all three landfills, and adjacent properties comprising the groundwater monitoring network are referred to collectively as the Site.

Physical Characteristics

The Taylor Road Landfill Superfund Site is located within an internally drained portion of the Polk Upland karst escarpment that is referred to as the Brandon Karst Terrain. The Site lies along a small ridge that extends northward from the Brandon Karst Terrain. In the vicinity of the Site are sinkholes, headlands of small drainage systems, and distinctive hills formed by the accumulation of marine and coastal sands. Based on U.S. Geological Survey topographic maps, the original land surface in the vicinity of the Site extended from a low of approximately 45-ft above mean sea level (MSL) to a high of slightly above 125-ft above MSL located on the small ridge on which the landfills were developed.

The hydrogeology of the Site is characterized by the presence of an ephemeral surficial aquifer in shallow sands above a leaky intermediate confining unit consisting of clays and sandy clays of the Hawthorn Group. The clays and sandy clays of the intermediate confining unit are discontinuous, blocky, and contain pipes and limestone pinnacles that are interconnected with the underlying Floridan aquifer. Due to the discontinuous nature of the Hawthorn Group in the vicinity of the Site, no intermediate aquifer system is considered to be present. The Floridan aquifer at the Site is comprised of the Tampa Member and underlying limestones. The Floridan aquifer is generally unconfined or very poorly confined at the Site.

The ecosystem of the Site is characterized primarily as disturbed grasslands containing manmade detention basins surrounded by an area of commercial/residential development containing small ponds and springs. The Site originally consisted of high pine, sandhill communities. Pockets of the original high pine communities remain in the vicinity of the Site, characterized primarily as Turkey Oak Barrens or Turkey Oak Sandhills. Although a variety of flora and fauna may be found in the vicinity of the Site, and possibly may include federal- and

state-listed species and state species of special concern, the immediate area around the landfills is not likely to serve as a significant habitat for these species. However, wading birds, small amphibians, reptiles, and mammals may use the stormwater runoff detention basins as a water source and intermittent foraging area. No perennial streams are present at the Site.

Land and Resource Use

The land surrounding the Taylor Road Landfill Superfund Site encompasses a variety of uses, including residential, commercial, and agricultural. The Site, as defined by the ring of compliance monitoring wells and 270-ft setback, includes all or part of 62 separate parcels ranging from approximately 0.1 acre to 80 acres in size. Excluding the property owned and maintained as landfill or buffer by Hillsborough County, the predominant land uses are residential and commercial. Agricultural use in the area is generally limited and non-intensive. In general, residential and particularly commercial land use has been expanding in recent years at the expense of agricultural areas. This mix of land uses is essentially unchanged and consistent with the land use identified in the ROD. A number of commercial properties have developed adjacent to the southwestern portion of the Site since remedy construction was completed.

Hillsborough County, Solid Waste Management Department, has actively sought compatible reuse opportunities for the landfill and buffer properties under their control; at the same time pursuing acquisition of property not already under their control within the compliance ring as such property becomes available. Current reuse of buffer zone property includes leases to the Hillsborough County survey and mapping organization, TRAC Aviation (runway and hanger facilities for remote control aircraft hobbyists), and a strip of property for use by the TA Travel Center. Leased properties are isolated from the landfills by fencing, and groundwater use is prohibited within the leased areas. Other reuse activities in place or being pursued include operation of a microturbine with recovered methane for electrical generation and provision of hay to the County transportation department for erosion control from mowing of the landfill caps and surrounding areas.

Private wells drilled into the upper Floridan aquifer have been the primary residential water supply in the area of the site. Extensions of County water service have focused on supply to areas within the compliance ring monitoring well setback. Currently, groundwater use within the compliance ring monitoring well setback is prohibited through implementation of institutional controls as a remedy component in the ROD. Anecdotal evidence of the effectiveness of the institutional controls was provided by Hillsborough County during the site inspection. Reportedly Armwood High School, located near the southern boundary of the compliance ring, applied for a permit to install an irrigation well. The local FDEP office contacted Hillsborough County about the advisability of granting the permit due to the presence of a use restriction notice in their files. Hillsborough County advised against granting the permit and contacted the appropriate school officials; the permit application was subsequently withdrawn. Due to the history of the area as a semi-rural agricultural community, the continued use of groundwater from the upper Floridan

aquifer by numerous nearby residences, and growth in the number of residences within the vicinity of the Site, un-permitted ground water use potentially may occur.

History of Contamination

The three landfills were developed sequentially. The first, known as the Taylor Road Landfill, was an FDOT borrow pit until it was permitted as a solid waste landfill for Hillsborough County in 1975. The Taylor Road Landfill was not constructed with a liner or leachate collection system. From May 1976 until February 1980, the County operated the Taylor Road Landfill, which was intended for disposal of residential, commercial, and industrial refuse. A total of 620,000 tons was disposed of in the landfill. An unknown quantity of hazardous waste is suspected to have been buried at this landfill. In the late 1970s, two events precipitated the development of capacity problems within the Taylor Road Landfill. One of these events was the settling of a legal dispute with EPA by Tampa, during which the city agreed to close its incinerator by January 1, 1980. This event diverted an estimated 790 tons of refuse per day to the Taylor Road Landfill. At the same time, another local landfill was closed, adding 490 tons of solid waste per day to the Taylor Road Landfill disposal load. Because of the discontinuation of the incinerator operation, waste generated from area hospitals, clinics, and other health providers also began to be buried at the Taylor Road Landfill.

In February 1980, the Taylor Road Landfill reached its capacity, and landfill operations were moved to an adjacent 10 acre parcel known as the FDOT Borrow Pit Landfill. The Borrow Pit Landfill was developed to operate as a high-rise sanitary landfill for residential, commercial, industrial, and agricultural wastes; dead animals; and water treatment sludge. The Borrow Pit Landfill was constructed with a liner and a leachate collection system. The Borrow Pit Landfill was to serve as a temporary site, pending the design, permitting, and construction of a proposed 200 acre landfill on the adjacent property to the north. A total of 320,000 tons of waste was disposed of in the Borrow Pit Landfill.

The application to extend the Taylor Road Landfill was met by strong public opposition from a neighborhood group. Their petition claimed that the County failed to properly maintain the site. In January 1980, the permit was initially approved, with warnings, such as landfilling operations could not proceed should any determination be made that groundwater was being contaminated by the existing Taylor Road Landfill or the Borrow Pit Landfill. Ultimately the 200-acre landfill expansion project was rejected, resolving that no guarantee of an environmentally safe operation could be given, and that additional wastes deposited on the site would add to the existing potential hazards. The County continued to use the Borrow Pit Landfill until October 1980, when waste disposal operations were transferred to a third 64-acre property located north and west of the two previous landfills. This property is known as the Hillsborough Heights Landfill.

The Hillsborough Heights Landfill was opened under emergency order, and occupied a portion of the 200 acres that had previously been rejected. In the landfill's early months of operation,

infectious wastes from hospitals, clinics, laboratories, and doctors' offices were among the refuse disposed of there. The landfill remained open for four years. Approximately 3,500,000 tons of waste were disposed of in the Hillsborough Heights Landfill.

Results of sampling in the area in 1979 revealed the presence of volatile organic compounds (VOCs) and metals contamination in site monitoring wells and numerous private wells. Residents were advised to discontinue use of their wells. The County established a program of bottled water delivery to 95 residences within a specified radial distance of the Taylor Road Landfill, and authorized construction of County water lines to the affected areas. Further groundwater investigations revealed that a plume of VOCs was migrating off site into residential areas. Additionally, methane gas from the Taylor Road Landfill was detected near residences adjacent to the site in potentially explosive concentrations during this same timeframe. In April 1980, water delivery was expanded to 180 homes and businesses. About 400 residences and business were eventually connected to the County water supply.

Initial Response

In October 1980, EPA filed suit against Hillsborough County under RCRA and the Safe Drinking Water Act, alleging the existence of ground water contamination from soil and hazardous waste disposed at the Site. EPA sought injunctive relief and demanded the implementation of certain operational and remedial measures at the Site. The complaint also sought the abatement of hazards caused by methane gas released at or attributable to the Site. Due to the ground water contamination identified in October 1981, EPA began the process of adding the Taylor Road Landfill Superfund Site to the National Priorities List of uncontrolled waste sites under the federal Superfund program. As EPA was developing administrative procedures for the newly created Superfund program, it pursued cleanup of the Site under RCRA.

Under the Consent Decree signed in 1983 by EPA, FDEP (predecessor agency), and Hillsborough County, the County agreed to a 30-year maintenance and environmental monitoring program governing all three landfills on County property. The decree specified requirements for the cap, cover, and drainage ditch, as well as methane gas control. In February 1984, the County began installation of methane monitoring wells around all three landfills, and commenced construction of a gas collection system, cap, cover, and drainage system in compliance with the Consent Decree. In addition, the County installed a water supply system to serve residents in a specified area south of the landfills, and proceeded with a routine sampling program which is ongoing.

In 1986, EPA initiated a Forward Planning Study under the Superfund Program to investigate all potential contaminant sources in the vicinity of the Site. In 1987, EPA initiated an area-wide private well sampling effort that used information from the Forward Planning Study and previous data collection efforts. In September 1987, EPA notified Hillsborough County and Waste Management, Inc. that they were potentially responsible parties (PRP) relative to the Site ground water contamination. A search for additional PRP was initiated in 1988 at the request of

the existing PRP, and July 1992 Special Notice Letters were issued to approximately 45 PRP. In February 1993, an Administrative Order on Consent was signed by EPA and 19 PRP to perform a Remedial Investigation/Feasibility Study.

Basis for Taking Action

The Remedial Investigation (RI) of the Taylor Road Landfill Superfund Site was performed by ERM-South, Inc., and was completed in 1995. A Baseline Risk Assessment (BRA) was conducted by CDM Federal Programs Corporation for EPA, and a Feasibility Study (FS) addressing remedial alternatives was prepared by ERM-South, Inc. in 1995. Based on the findings and conclusions of the RI, BRA, and FS, it was determined by EPA that remedial action to address ground water contamination was warranted. A Proposed Plan identifying EPA's preferred remedial alternative was circulated for community input, and a ROD was signed by EPA in September 1995 selecting the remedy.

Remedial Investigation

The RI evaluated landfill leachate, surface water and sediment from the Site stormwater detention basins, and ground water from Site monitoring wells and selected private wells. The leachate data were used to evaluate the contaminant source concentrations, and, since the leachate collection system is not accessible for exposure, these data were not used in the BRA. The analytical results for leachate indicated the presence of volatile organic compounds, semi-volatile organic compounds, one pesticide, and inorganics. The analytical results for surface water and sediment indicate that inorganics were detected in surface water, and that volatile organic compounds, semi-volatile organic compounds, pesticides, and inorganics were detected in sediment. The types and concentrations of chemicals detected in surface water and sediment were determined to be typical of other stormwater detention basins in the area. Although it also was determined that current human exposure to surface water and sediment was unlikely, potential future exposure was considered possible. Surface water and sediment data were evaluated in the BRA for human health risk and potential impacts to ecological receptors.

The ground water data selected for evaluation during the RI were generated from 12 quarterly ground water sampling events conducted by Hillsborough County from 1990 to 1992, and from sampling conducted by ERM-South, Inc. during August and September 1993. Figure 1 (Attachment 1) illustrates the locations of monitoring and private wells in the vicinity of the Site. Ground water samples were analyzed for physical parameters, selected metals, nutrients, and organic compounds. The ground water analytical data, validated and qualified, is summarized in Table 2 for those analytes that were positively detected at least once. This table shows the range of detections above the sample quantitation limit, the date the maximum concentration sample was collected, frequency of detection by year, and the maximum background concentration (from Well 27-D). The average concentrations were calculated based on positive detections only. A broad range of volatile organic compounds and inorganics at average concentrations exceeding applicable statutory thresholds were identified.

Table 2: Occurrence and Distribution of Chemicals in Ground Water (1990 - 1993)

DETECTABLE ANALYTE	Min.	Max.	Mean	Sampling Date of Maximum	Frequency of Detection (1)				Maximum in Background (Well 27-D)	Federal MCL (2)	Florida DER Groundwater Guidance (3)	USEPA Region III (4,5)	COPO (6)
	ug/L	ug/L	ug/L		1990	1991	1992	1993	ug/L	ug/L	ug/L	Flask Level =1E-06	HCI=0.1
PURGEABLE ORGANICS													
1,1-DICHLOROETHANE	0.4	192	22	4/90	65/104	33/78	47/88	5/8					51
1,1-DICHLOROETHYLENE	1	279	31	1/90	28/104	21/78	31/88	4/5	1	7	7**	0.044	
1,2-DICHLOROBENZENE	1	198	20	7/80	25/104	12/78	14/88	3/5		600	600**		57
1,2-DICHLOROETHANE	1	3	1.9	7/81	7/104	2/78	0/88	0/5		5	3**	0.12	
1,3-DICHLOROBENZENE	1	3	2.0	11/81	1/104	1/78	1/88	0/5		600			53
1,2-DICHLOROPROPANE	1	6	2.0	7/81	13/104	7/78	11/88	1/5		5	5**	0.18	
1,4-DICHLOROBENZENE	1	45	5.7	4/81	26/104	20/78	13/88	3/5		75	75**	0.44	
CARBON DISULFIDE	2	3	2.5	11/81	0/104	2/78	0/88	0/5					21
ACETONE	2	278	30	4/81	4/104	18/78	44/88	0/5	5				370
BENZENE	0.6	12	3.1	1/90	29/104	7/78	10/88	2/5		6	1**	0.36	
CHLOROBENZENE	1.1	5.3	3.1	10/82	4/104	4/78	7/88	1/5		100	100**		3.9
CHLOROFORM	1	1	1	4/90	1/104	0/78	0/88	0/5		100	5***	0.15	
CHLOROMETHANE	2	2	2	8/83	0/104	0/78	0/88	1/5			2.7***	1.4	
DIBROMOCHLOROMETHANE	6	6	6	10/90	1/104	0/78	0/88	0/5			1***	0.13	
ETHYLBENZENE	1.4	18	5.7	7/91	1/104	3/78	1/88	0/5		700	700**/130***		130
METHYLENE CHLORIDE	0.7	54	11	1/90	10/104	5/78	14/88	1/5		5	5**	4.1	
TETRACHLOROETHENE	0.8	145	23	4/90	44/104	13/78	15/88	2/5		5	3**	1.1	
TOLUENE	0.2	52	9	7/81	4/104	2/78	4/88	2/5		1000	1000**/40***		75
trans-1,2-DICHLOROETHYLENE	0.3	135	32	1/80	51/104	29/78	7/88	2/5		100	100**		12
cis-1,2-DICHLOROETHYLENE	3	45	16	8/83	NA	NA	NA	4/5		70	70**		6.1
STYRENE	3	3	3	7/91	0/104	1/78	0/88	0/5		100	100**		160
TRICHLOROETHYLENE	1	180	18	10/92	56/104	26/78	43/88	4/5		5	3**	1.6	
VINYL CHLORIDE	1	106	24	4/90	28/104	18/78	23/88	3/5		2	1**	0.019	
XYLENES (TOTAL)	2	85	12	7/81	6/104	8/78	1/88	0/5		10000	10000**/20***		1200

DETECTABLE ANALYTE	Min.	Max.	Mean	Sampling Date of Maximum	Frequency of Detection (1)				Maximum in Background (Well Z7-D)	Federal MCL (2)	Florida DER Groundwater Guidance (3)	USEPA Region III (4,5)		COPC (6)
	ug/L	ug/L	ug/L		1990	1991	1992	1993	ug/L	ug/L	ug/L	Risk Level = 1E-06	HQ=0.1	
SELECTED INORGANICS														
ARSENIC	3.7	9.7	3.7	8/93	NA	NA	5/13	1/8		50	50**	0.038	1.1	N*
BARIUM	14.2	221	97	8/93	NA	NA	1/13	4/8		2000	2000**		260	N
CADMIUM	5	5	5	4/92	NA	NA	1/13	0/6		5	5**		1.8	N*
CHROMIUM	11	11	11	4/92	NA	NA	1/13	0/6		100	100**		9700	N
COPPER	200	200	200	1/91	0/16	1/5	0/11	0/6		1000**	1000**		140	N*
LEAD	1.8	13	4.5	4/92	NA	NA	3/13	6/8	2	15*	15*			N
MANGANESE	12.4	2300	320	8/93	5/12	2/5	6/20	3/8	311		50***		18	N*
MERCURY	0.2	42.3	4.5	7/90	8/104	12/79	27/59	0/8	2	2	2**		1.1	Y
NICKEL	40.7	95.4	68	8/93	NA	NA	NA	2/5		100	100**		73	Y
NITRATES	30	38700	5200	1/90	94/104	23/25	44/82	3/6	4450	10000	10000**		5800	N*
SELENIUM	2	2	2	8/93	NA	NA	NA	1/8		50	50**		18	N
VANADIUM	53.7	53.7	53.7	8/93	NA	NA	NA	1/8					26	N*
ZINC	10	403	84	1/91	8/12	4/5	5/13	1/6	159		5000**		1100	N

Source: CDM - BRA as presented in EPA/ROD/R04-95/239 1995.

NOTES:

(1) Frequency of detection = # of detections/# of samples.

(2) MCL = Maximum Contaminant Level. * - Value for lead is an action level. EPA, December 1993.

(3) Florida Department of Environmental Regulations Groundwater Guidance Concentrations. June 1994.

** - Primary Standard. *** - Secondary Standard. **** - Guidance Concentration.

(4) USEPA Region III - Risk-based Concentrations for tap water. January 7, 1994.

(5) HQ = Hazard Quotient.

(6) COPC = Chemical of Potential Concern. Y = Yes. N = No. N* = Not selected as a COPC, because the chemical was not detected or detected at a low frequency in the wells selected for risk assessment. N** = Concentrations detected in wells selected for the risk assessment did not exceed two times the background concentration.

Baseline Risk Assessment

The BRA was used to identify and select chemicals of potential concern (COPC) for ground water and surface water and sediment based on current or future risk to human or ecological receptors. Carcinogenic COPC were based on a risk level of 1E-06, and non-carcinogens were based on a Hazard Quotient of 0.1 in order to consider potential exposure to multiple chemicals. COPC were also selected based on comparison to relevant promulgated standards (e.g., federal and state Maximum Contaminant Levels), regulatory guidance, and background concentrations.

The ground water current and future exposure pathway for the human health risk assessment identifies landfill waste as the chemical source, drinking water wells in the Floridan aquifer as the exposure points, and ingestion of ground water and inhalation of volatiles released from ground water as the feasible routes of human exposure. The current exposure pathways for leachate and surface water and sediment are considered to be incomplete, but the future exposure pathway for surface water and sediment may be completed. The exposure points for current ground water users are wells in the down gradient residential area, and on site monitoring well data were used for the future use scenario.

Toxicity assessment for the COPC is based on information contained in EPA's Integrated Risk Information System database for both carcinogenic and non-carcinogenic toxicity. The combination of a complete, or potentially complete, exposure pathway and toxicity information for the COPC allows risk characterization to be performed. Ground water was determined to contain COPC at concentrations posing an unacceptable risk to potential future users. Surface water and sediment, while containing elevated COPC concentrations, were not found to pose an unacceptable risk to human health. Likewise, an impact to pelagic aquatic biota and benthic organisms is suggested, but it was determined that this impact is unlikely to significantly affect the receptors. Based on the findings of the BRA, remedial action was necessary to prevent human exposure to contaminated ground water and to restore the ground water resource.

Feasibility Study

The FS evaluated four alternatives for remediation of ground water contamination at the Taylor Road Landfill Superfund Site. The following alternatives were evaluated:

- (7) Alternative 1: No Action
- (8) Alternative 2: Prevent Human Exposure to Contaminated Ground Water
- (9) Alternative 3: Collect and Treat Ground Water at Point of Compliance on a Contingent Basis
- (10) Alternative 4: Collect and Treat Ground Water at Landfill Perimeter

Each of the alternatives evaluated in the FS consists of several remedy components, and, for alternatives 2 and 3, contingent and non-contingent remedy components are defined as well. Comparative analysis of each alternative under contingent and non-contingent approaches was performed with respect to the nine evaluation criteria (*Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*, EPA 1988). The FS provided the framework for EPA to determine an appropriate remedial action approach to address impacts from the Site to human health and the environment.

Alternative 1, No Action, provides a baseline for comparison to the other alternatives, and assumes no additional work will be performed to address ground water contamination. This alternative does assume the continuation of the maintenance and monitoring program being performed under RCRA.

Alternative 2, Prevent Human Exposure to Contaminated Ground Water, includes three remedy components: institutional controls restricting construction of new potable-water wells in areas affected by Taylor Road Landfill; provision of water from the County supply to residences surrounding the Site; and, natural attenuation of ground water contamination to levels below applicable, or relevant and appropriate requirements. The second component of this alternative is further divided into non-contingent and contingent approaches. The non-contingent approach, referred to as Alternative 2a, involves provision of County water service to approximately 490 residences in the vicinity of the Site, regardless of whether the ground water contaminant plume is enlarging. The contingent approach, Alternative 2b, involves extending County water service to about 20 existing residences within a 270-ft setback of the ring of compliance wells, installing four additional monitoring wells, and provision of County water supply to affected residents within one month if the contaminant plume grows in size.

Alternative 3, Collect and Treat Ground Water at Property Boundary on a Contingent Basis, consists of the same remedy components as Alternative 2b with the addition of the collection and treatment of groundwater along the southern boundary of the Site on a contingent basis in the event contaminant concentrations at the Site boundary begin increasing. The collection and treatment of ground water would be accomplished through the installation and operation of two extraction wells and a treatment system. The need for implementing this contingency would be triggered by increases observed in trend analysis of ground water monitoring data. Additionally, if increasing trends in vinyl chloride concentrations in the up-gradient or side-gradient monitoring wells were observed, then control (additional to the existing landfill gas collection system) and/or remediation of vapor-phase-transported constituents may be required.

Alternative 4, Collect and Treat Ground Water at Landfill Perimeter, is designed to comply with the CERCLA policy of compliance with drinking-water standards at the outer perimeter of waste contained in landfills. Alternative 4 includes all components of Alternative 2b plus collection, treatment, and disposal of groundwater. Unlike Alternative 3, ground water

treatment is not on a contingent basis. However, the potential for the need to address vapor-phase transport of vinyl chloride is recognized.

Comparative analysis of the various remedial alternatives relative to the nine criteria indicated that all alternatives were protective of human health and the environment to varying degrees. Alternative 1 is protective under current conditions, but may not remain protective in the future. Alternative 2a is protective of both current and future human exposure. Alternative 2b is protective under current conditions, and includes contingency to remain protective in the future. Under both contingent and non-contingent Alternative 2, exposure to contaminant concentrations below drinking-water standards may occur down gradient outside the area connected to County water supply. Alternatives 3 (with contingency) and 4 provide the most reliable control for potential low-level down gradient exposure through extraction and treatment of ground water. Estimated present-worth costs for each alternative were calculated as follows: Alternative 1 - \$0, Alternative 2a - \$4,600,000, Alternative 2b - \$2,200,000, Alternative 3 (without contingency) - \$2,200,000, Alternative 3 (with contingency) - \$7,000,000, and Alternative 4 - \$10,200,000.

IV. Remedial Actions

Remedy Selection

The EPA WasteLAN database defines one site-wide operable unit (OU) for the Taylor Road Landfill Site, and the remedial action selected in the ROD is expected to be the final action for this OU. The remedial action at the Taylor Road Landfill Superfund Site was designed to address ground water contamination since source control was accomplished through a prior RCRA action. The ROD for Taylor Road Landfill (EPA/ROD/R04-95/239) was signed on September 29, 1995, and selected Alternative 3, Collect and Treat Ground Water at Property Boundary on a Contingent Basis, as the remedy for the Site. The major components of this remedy include: institutional controls, extension of water lines and monitoring, and natural attenuation with contingent corrective action. In the ROD, the Florida Primary and Secondary Standards and Minimum Criteria were established as the remediation levels for ground water, and the point of compliance was set as the ring of monitoring wells encircling the three landfills.

The components of the remedy selected in the ROD are described as follows:

- (1) **Institutional Controls.** Implementation of current and future controls to restrict construction of potable-water wells that would extract water affected by the Site;
- (2) **Monitoring and Extension of Water Lines.** Modification of the existing ground water monitoring program to include quarterly monitoring of a "ring" of monitoring wells that define the point of compliance for Site ground water. Monitoring will be used to evaluate compliance with Florida Primary and Secondary Drinking Water Standards and Minimum Criteria as the remediation

levels. Provision of County water service to human receptors within a 270-ft setback of the compliance ring monitoring wells.

- (11) Contingent expansion of the compliance ring monitoring wells. If quarterly sampling reveals an exceedance of remediation levels that is confirmed by subsequent sampling, the ring of monitoring wells will be expanded to encompass the revised compliance boundary.
- (12) Expansion of the County water-supply network. The expansion of the County water-supply network to connect receptors within the setback zone, to support institutional controls, and to meet a one-month response time for connection of additional receptors should the area of impacted ground water increase in size.

3. **Natural Attenuation with Contingent Corrective Action.** Maintenance of ground water contaminant levels below remediation levels at the point of compliance will be achieved through natural attenuation or contingent corrective action.

- Natural attenuation. A reduction in contaminant concentrations through natural processes such as biodegradation.
- Contingent Corrective Action. The extraction and collection of ground water at the property boundary for treatment to control ground water flow and reduce contaminant concentrations to acceptable levels. Evaluation of the integrity of the landfill cover installed under RCRA also is a component of this contingency. This contingency would be triggered by exceedance of remediation levels at the point of compliance as evaluated annually by EPA and FDEP based on trend analysis and other site data.

Remedy Implementation

EPA issued a Statement of Work to the settling defendants at the Site pursuant to the Consent Decree following the ROD. The Statement of Work prescribes the approach to be used by the settling defendants, represented by Hillsborough County, to fully implement the selected remedy in the ROD, and identifies specific tasks and deliverables to be accomplished. The tasks and deliverables included the following: project planning; development and submittal of a Remedial Design/Remedial Action Work Plan; notification and support for a Final Construction Inspection; development and submittal of a Final Construction Report; and, development and submittal of a Remedial Action Report.

Hillsborough County prepared and submitted a Remedial Action Work Plan in April 1998 to accomplish the remedy objectives. The work plan provided for the installation of six

monitoring wells (four new and two replacements), as well as revision of the requirements for the existing ground water monitoring program. The new ground water monitoring program consisted of thirteen compliance ring wells, three additional interior wells, and one background well to be sampled quarterly for field parameters, volatile organic compounds, metals, mercury, and nitrates. Construction methods, sampling methods, and quality assurance/quality control requirements were specified as sub-plans within the work plan. Institutional controls implementation would consist of placement of a deed notice for the County property at the Site, and enforcement of existing ordinances prohibiting property development or installation of new potable supply wells in areas within 1,500-ft of County supply lines and/or requiring request of extension of such service. Approximately twenty residences within the compliance ring setback zone were identified for connection to the existing County water distribution network in the work plan. Quarterly reporting requirements for the ground water monitoring program were also set forth in the work plan.

Following regulatory review and discussion about the Remedial Action Work Plan, a Remedial Action Work Plan Addendum was issued in July 1998 revising the ground water monitoring plan. The revised ground water monitoring plan incorporates quarterly sampling of 18 ground water monitoring wells (11 existing and 7 to be installed); of which 13 comprise the compliance ring, 4 are additional interior monitoring points, and 1 is a background well. The analytical parameters for the ground water monitoring were also revised to include field parameters, volatile organic compounds, metals, mercury, chloride, nitrates, total dissolved solids, and sulfate.

Activities undertaken by Hillsborough County to implement the planned remedial action are documented in the Final Construction Report for the Taylor Road Landfill Superfund Site (April 16, 1999). As part of the institutional controls, Hillsborough County Solid Waste Management Department filed a "Notice of Entry of Consent Decree for the Taylor Road Landfill Superfund Site in Hillsborough County, Florida" with the Clerk of the Circuit Court in Hillsborough County in February 1998. This filing fulfills the requirement of the Consent Decree that all instruments conveying an interest in the Site shall contain a notice stating that the property is subject to the Consent Decree. Field construction activities to implement the remedy were begun in November 1998 with the construction of seven new monitoring wells and the rehabilitation of one damaged well. Following construction, the new and existing wells in the ground water monitoring plan were surveyed, and dedicated sampling equipment was installed. Five land parcels, with seven eligible receptors, were identified within the established compliance ring 270-ft setback that were not connected to County water supply. All seven property owners agreed to be connected to the County water supply network, and extension of water lines, meter placement, and connection to the structures was accomplished in February and March 1999. In summary, five homes, one trailer park, and one business were connected to the County water supply network. The first round of sampling of 23 monitoring wells (this includes 5 additional interior monitoring points added after the work plan addendum) under the updated ground water monitoring program was performed in April 1999.

System Operations/Operation and Maintenance

Operation and maintenance activities at the Site consists of those activities associated with upkeep of the landfills as required under the existing RCRA Consent Decree and the long-term care permit with FDEP, and those activities necessary for the ongoing implementation of the monitoring component of the CERCLA remedy. These activities are summarized as follows:

- **Landfill Operation and Maintenance.**
 - Monitoring of ground water, surface water and landfill gas;
 - Site inspections (daily, weekly, monthly, quarterly and after rainfall);
 - Repairs (facilities, monitoring wells, landfill cover, surface water management system, and landfill gas monitoring and recovery system);
 - Notification, record keeping and reporting; and,
 - Facility and system upgrades
- **Ground Water Operation and Maintenance**
 - Monitoring of ground water;
 - Monitoring well repair and replacement;
 - Maintenance of access agreements (off-site wells); and,
 - Notification, record keeping, and reporting.

Costs associated with Landfill and Ground Water operation and maintenance are tracked by Hillsborough County, and are summarized in Table 3. Since landfill operation and maintenance is performed by a dedicated on-site workforce, labor costs are included in the cost summary. Ground water operation and maintenance is performed by County employees who support multiple sites, and these labor costs are not included in the operation and maintenance summary. Additionally, landfill facility and system upgrades performed by Hillsborough County are tracked separately. Since 1998, upgrade projects, including re-routing of the Taylor Road Landfill gas collection system, installation of new gas collection wells at Taylor Road Landfill, and drainage improvements between the FDOT and Taylor Road Landfills, have been undertaken at a cost of approximately \$500,000. The upgrades and improvements were performed as approved engineering solutions to observed negative changes in the efficiency of the Taylor Road Landfill gas collection system and to correct persistent erosion control problems between the landfills.

Table 3: Site Operation and Maintenance Costs

Year	Ground Water O&M Cost	Landfill O&M Cost
1998	\$0	\$864,209
1999	\$101,485	\$917,470

2000	\$120,006	\$727,047
2001	\$120,000	\$601,384
2002	\$23,985	\$745,788

Post-ROD Changes

An Explanation of Significant Difference was issued by EPA in August 2000 to remove Florida Secondary Drinking Water Standards from the federally-enforceable applicable, or relevant and appropriate requirements identified in the ROD. The rationale for this change is based on the fact that Secondary Drinking Water Standards are established to improve the taste, color and odor of drinking water, rather than address actual health threats. As such, EPA has determined that these standards are not applicable, or relevant and appropriate requirements, are not federally-enforceable (40 CFR Part 143), and are not needed to protect public health. The Florida Department of Environmental Protection did not concur with EPA's change to the ROD, and does retain authority to separately enforce Florida Secondary Drinking Water Standards at its discretion.

Based on the ROD and ESD for this Site, the final remediation levels for this action are the Florida Primary Drinking Water Standards for volatile organic compounds and metals and the Florida Minimum Criteria for Organoleptics as set forth in the *Groundwater Guidance Concentrations* (FDEP, 1994). The remedial action objectives, while not explicitly established in the ROD, can be inferred as: 1) eliminate current human exposure to ground water contaminants above remediation levels through provision of County water; 2) prevent future human exposure to ground water contamination above remediation levels through a combination of institutional controls, natural attenuation, and contingent treatment of ground water; and, 3) maintain ground water concentrations below remediation levels at the point-of-compliance through natural attenuation and/or contingent treatment.

V. Progress Since the Last Review

This report documents the first Five-Year Review for the Taylor Road Landfill Superfund Site; there have been no previous reviews.

VI. Five-Year Review Process

The Five-Year Review process for the Taylor Road Landfill Superfund Site consisted of project management, community involvement, document/data review, site inspection, interviews, and a determination as to the ongoing protectiveness of the remedy. As the lead agency, EPA Region 4 performed the Five-Year Review. The Florida Department of Environmental Protection is the support agency for this activity, and has been involved throughout the Five-Year Review process. Hillsborough County Solid Waste Management Department is the representative of the

responsible parties for the Site, and has cooperated during performance of the Five-Year Review providing site access and other material support as requested.

Administrative Components

Project management activities included identifying the EPA Region 4 team for the Five-Year Review, developing a schedule for the review activities, and notifying interested parties of the start of the Five-Year Review process. Key personnel involved in the Five-Year Review of the Site, along with organizations and roles, are presented in Table 4. Formal notification of the start of the Five-Year Review process was sent to Hillsborough County by letter on June 6, 2003, and other interested parties were furnished copies of the letter at the same time.

Table 4: Five-Year Review Key Personnel

Name	Organization	Role
David Keefer	EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303 (404) 562-8932	Remedial Project Manager
L'Tonya Spencer	EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303 (404) 562-8463	Community Involvement Coordinator
Bill O'Steen	EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303 (404) 562-8645	Senior Hydrogeologist
Kelsey Helton	Florida Department of Environmental Protection Twin Towers Office Building 2800 Blair Stone Rd Tallahassee, FL 32399 (850) 245-8969	Hazardous Waste Cleanup Section Chief
Wendy Murphy	Florida Department of Environmental Protection Twin Towers Office Building 2800 Blair Stone Rd Tallahassee, FL 32399 (850) 245-8967	State Project Manager
David Adams	Solid Waste Management Department 24th Floor County Center Tampa, FL 33601 (813) 276-2944	Environmental Manager

Community Notification and Involvement

Community involvement activities associated with the Five-Year Review include publication of a legal notice at the start of the Five-Year Review process, contacts and interviews with citizens/community groups identified in the Community Relations Plan (CDM, 1989), and issuance of a Fact Sheet and second legal notice upon completion of the Five-Year Review. Legal notices are published in the Tampa Tribune, and Fact Sheets will be sent to the Site mailing list and placed in the Information Repository. An inspection of the Information Repository, maintained at the Thonotosassa Public Library on 10715 Maion St., Thonotosassa, FL 33592, indicates that the site file is up-to-date and readily accessible.

Document and Data Review

Both the Administrative Record and Site File for the Taylor Road Landfill Superfund Site were reviewed and accessed to gather supporting information for the Five-Year Review. These sources contain the combined documentation of the decisions and actions taken at the Site; including relevant RCRA documentation for closure of the landfills. Attachment 2 contains a complete list of the supporting documentation used in development of this Five-Year Review Report. A significant portion of this documentation consists of routine reporting from Hillsborough County presenting the results of Domestic Supply Well sampling and analysis, Monitor Well sampling and analysis, and Landfill Operations reports. This data forms the basis of the technical assessment of remedy performance.

A technical review of the ground water monitoring data was performed to evaluate the remedy effectiveness and progress of natural attenuation. The monitoring data set used for this analysis includes compliance ring and interior monitoring wells for the period of January 1995 through January 2003. Table 5 summarizes these data. Additionally, a review of recent monthly monitoring data for domestic supply wells also was performed.

Compliance and Interior Wells

Concentration trends were evaluated for site contaminants that exceeded remediation levels in at least one sample obtained in the past year from a monitoring well. Additionally, because of its high concentrations and widespread distribution in ground water, trends in the concentration of manganese were also considered. The contaminants that are evaluated in this analysis include tetrachloroethene (PCE), trichloroethene (TCE), cis 1,2-dichloroethene (cis 1,2-DCE), vinyl chloride, 1,1-dichloroethene (1,1-DCE), methylene chloride, benzene, arsenic, mercury, nickel, nitrate, and manganese. A report titled "Taylor Road Landfill Superfund Site Groundwater Quality Statistical Evaluation, Hillsborough County, Florida" (SCS Engineers, 2003) includes a formal statistical trend analysis for these and other monitored contaminants. This report's conclusions regarding concentration trends are included in this section of the Report.

Table 5: Ground Water Monitoring Data Summary (1995 - 2003)

MONITORED CONTAMINANT	MINIMUM CONCENTRATION	MAXIMUM CONCENTRATION, WELL, AND DATE
1,1-Dichloroethane (ug/l)	<0.7 ug/L	64 ug/L TR-4D 7/10/95
1,1-Dichloroethene (ug/l)	<0.9 ug/L	130 ug/L TR-4D 7/12/99
1,2-Dichlorobenzene (ug/l)	<0.6 ug/L	72 ug/L TR-4D 7/10/95
1,2-Dichloroethane (ug/l)	<0.9 ug/L	2 ug/L F-2 1/21/97
1,3-Dichlorobenzene (ug/l)	<0.6 ug/L	7 ug/L 18-D 10/23/95
1,2-Dichloropropane (ug/l)	<1 ug/L	4 ug/L 18-D 10/22/96
1,4-Dichlorobenzene (ug/l)	<0.7 ug/L	32 ug/L TR-4D 7/10/95
1,2,4-Trimethylbenzene (ug/l)	<1 ug/L	2.7 ug/L 18-D 10/25/01
Carbon disulfide (ug/l)	<0.5 ug/L	no detections
Acetone (ug/l)	<5 ug/L	23 ug/L TR-4D 10/18/99
Benzene (ug/l)	<0.8 ug/L	5.7 ug/L C-6 7/18/00
Bromomethane (ug/l)	<1 ug/L	2 ug/L C-6 4/25/01
Chlorobenzene (ug/l)	<1 ug/L	11 ug/L TR-4D 7/10/95
Chloroethane (ug/l)	<1 ug/L	15 ug/L C-6 7/18/00
Chloroform (ug/l)	<1 ug/L	130 ug/L TR-4D 7/10/95
Chloromethane (ug/l)	<1 ug/L	no detections
Dibromochloromethane (ug/l)	<0.4 ug/L	no detections
Dichlorodifluoromethane (ug/l)	<0.4 ug/L	2 ug/L TR-4D 7/15/00
Ethylbenzene (ug/l)	<0.7 ug/L	no detections
Isopropylbenzene (ug/l)	<0.8 ug/L	2 ug/L C-6 7/18/01
Methylene chloride (ug/l)	<1 ug/L	56 ug/L F-2 4/8/96
Tetrachloroethene (ug/l)	<0.7 ug/L	14 ug/L C-6 1/14/03
Toluene (ug/l)	<0.8 ug/L	2 ug/L NE-23 10/23/95
trans-1,2-Dichloroethene (ug/l)	<1 ug/L	2 ug/L F-15 4/9/96
cis-1,2-Dichloroethene (ug/l)	<0.5 ug/L	82 ug/L 18-D 7/10/95
Styrene (ug/l)	<1 ug/L	no detections
Trichloroethene (ug/l)	<1 ug/L	75 ug/L TR-4D 7/12/99
Vinyl Chloride (ug/l)	<1 ug/L	100 ug/L TR-4D 4/10/95; 18-D 7/8/96
Xylenes (ug/l)	<1 ug/L	3.5 ug/L C-6 7/18/00
Arsenic (ug/l)	<5 ug/L	39 ug/L F-1A 10/25/01
Barium (ug/l)	<10 ug/L	500 ug/L TR-3D 1/13/00
Cadmium (ug/l)	<1 ug/L	2.8 ug/L TR-3D 10/25/01
Chromium (ug/l)	<1 ug/L	91 ug/L 31-D 1/17/01
Copper (ug/l)	<5 ug/L	47 ug/L F-3 7/14/99
Lead (ug/l)	<4 ug/L	21 ug/L F-3 7/14/99
Manganese (ug/l)	<5 ug/L	5400 ug/L TR-3D 1/13/00
Mercury (ug/l)	<0.2 ug/L	8.4 ug/L 32-D 7/17/01
Nickel (ug/l)	<5 ug/L	1100 ug/L 28-D 10/18/00
Selenium (ug/l)	<5 ug/L	11 ug/L C-3 4/8/02
Vanadium (ug/l)	<10 ug/L	210 ug/L C-3 4/13/99
Zinc (ug/l)	<20 ug/L	100 ug/L F-3 7/14/99
Nitrates (mg/l)	<0.01 mg/L	33.6 mg/L 30-D 10/22/96
Ammonia nitrogen (mg/l)	<0.02 mg/L	0.85 mg/L F-12 7/15/02
pH (units)	5.92	8.06 C-9 1/16/01
Dissolved oxygen (mg/l)	0.18 mg/L	11.4 mg/L C-6 1/14/03
Conductivity (umhos/cm)	6.06 umhos/cm	1220 umhos/cm C-6 1/18/01; 4/9/02
Chloride (mg/l)	3.6 mg/L	60.7 mg/L 18-D 4/7/97
Total dissolved solids (mg/l)	100 mg/L	880 mg/L C-6 7/18/01
Sulfate (mg/l)	0.51 mg/L	78 mg/L C-9 7/17/00
Sodium (mg/l)	0.5 mg/l	20 mg/L F-4A 1/11/00 7/15/02

Monitoring wells at the site are divided into compliance wells or interior wells. The conditions at the compliance wells are of the greatest concern.

Trichloroethene trends are shown on Figure 2 (Attachment 1). Figure 2 shows time-concentration plots for all wells where TCE has exceeded its 3 ug/L remediation level. This figure shows that for most of the monitoring wells where TCE has exceeded the remediation level, the concentrations are either decreasing, or showing no statistically significant trend. In the latter case, concentrations of TCE are close to the 3 ug/L standard. One well (C-6) is showing a statistically significant increase in the TCE concentration for the period of record, although the most recent samples from this well suggest that the concentrations of TCE at this well have stabilized. TCE is not a concern at any compliance monitoring well.

The concentration trends for cis 1,2-DCE are shown on Figure 3. Wells shown on this figure have either had cis 1,2-DCE at concentrations above the remediation level or have otherwise had repeated detections of this contaminant. Although recent concentrations of this contaminant have not exceeded its 70 ug/L standard, this contaminant can be degraded to produce vinyl chloride, which has a 1 ug/L remediation level.

The trend analyses indicate that cis 1,2-DCE is decreasing at two wells, increasing at two wells, and that there is no trend indicated at three wells. The time-concentration plots on Figure 3 suggest that even where there is no statistically discernable trend, concentrations of cis 1,2-DCE are probably decreasing. Where there is a statistically significant increasing concentration, recent concentration trends appear to either be downward or there is no current increasing trend. Cis 1,2-DCE is not a concern at any compliance monitoring well.

Figure 4 shows the vinyl chloride concentration trends. Most of the wells show either decreasing concentrations over time or show no trend and have vinyl chloride concentrations of less than 10 ug/L. Most of the wells that have had very high vinyl chloride concentrations have had recent concentrations of vinyl chloride that are much lower. Vinyl chloride is not a concern at any compliance monitoring well.

Two wells have statistically significant increasing concentrations of vinyl chloride. Well C-6 has shown an increasing vinyl chloride trend, with current concentrations hovering around 20 ug/L. This well also has shown increasing TCE concentrations in recent samples. Well TR-3D also has a trend of increasing concentrations. However, the most recent samples from this well have had vinyl chloride at less than the detection limit.

Figure 5 shows the time-concentration data for 1,1-DCE. Well TR-4D, with the most significant concentrations of 1,1-DCE, has shown a statistically significant increase in concentrations over time. However, the most recent samples from this well suggest either a decreasing concentration trend, or possibly that the maximum concentrations at this well have already been observed. 1,1-DCE is not a concern at any compliance monitoring well.

Figure 6 shows benzene concentration trends. This contaminant is showing either no trend or a decreasing concentration trend. Recent benzene concentrations are either close to or less than the 1 ug/L remediation level in all site monitoring wells.

Figure 7 shows the concentration trends for manganese. Manganese is apparently decreasing in concentration in at least five wells and is increasing in concentration at two wells. Concentrations of manganese are either decreasing or are stable at the two compliance wells shown on the figure. The statistically-based designation of F-2 as an increasing well and of 18-D, TR-3D, and C-2 as no-trend wells appears to be questionable, considering the data plotted on the figure. All of these wells are interior monitoring points.

Figure 8 shows trends for miscellaneous contaminants where there are data trends or contaminant detections that are noteworthy. TR-2D is the single compliance point monitoring well where there is a statistically significant increase of a contaminant of concern. Concentrations of nitrate at this well have increased to levels that approximate the 10 mg/L remediation level. It is unclear from the data if nitrate concentrations will continue to increase to levels higher than the standard or if the nitrate concentrations have stabilized at about 10 mg/L. At most of the other locations shown on Figure 8, concentrations of contaminants are decreasing. The notable exception to this general condition is at well C-6, where PCE, mercury, and nitrate are all apparently increasing. This well is also the location where several other contaminants are showing statistically significant concentration increases.

To summarize the evaluation of monitoring well trends, concentrations of all contaminants are remaining stable or are decreasing in most monitoring wells. With one exception, locations where concentrations are apparently increasing are interior wells. TR-2D is a compliance well where the nitrate concentration has increased over time to near its 10 mg/L MCL. It is unclear if this increasing concentration trend will continue into the future. Several contaminants have increased in concentration at well C-6, an interior well. These concentration trends have not been observed at well C-8, the compliance well located in relatively close proximity to C-6.

Domestic Supply Wells

Recent (2003) data from seven private water-supply wells were reviewed to determine if there were any concerns about site-related contamination reaching these wells. Five sample rounds from 2003 were available for six of these wells, and four samples were collected from the seventh well.

There may be indications of some very low-level contamination from the site that has reached some of these wells. Cis 1,2-DCE at a sub-microgram per liter concentration was detected in the most recent sample from two of the wells (identified by Hillsborough County as wells "P-18A" and "P-19"). In the most recent sample from well "P-24," 1,1-dichloroethane was reported at a concentration of 0.3 ug/L. A few other organic compounds have been detected in the most recent P-18A sample at comparably low concentrations, and dichlorofluoromethane was

detected at a concentration of between 1 and 2 ug/L in two samples from well "P-4." It is uncertain if any of this organic contamination is site related or if it is increasing in concentration. None of the detected organic contaminants are at concentrations that are of concern from a regulatory or risk-based perspective.

Inorganic constituents that have been detected in the private well samples do not indicate any impacts from the site. One notable occurrence is the low pH in the samples identified as being from well "P-22." The pH in samples from this well are inconsistent with what would be expected in ground water from the Floridan aquifer, which is the primary source of drinking water for this area. The P-22 samples are also characterized by both a very low dissolved solids content (also inconsistent with a Floridan aquifer source) and nitrate concentrations that are notably less than in the samples from the other private wells. P-22 appears to be completed in earth material that is dissimilar to the limestones of the Floridan aquifer. This well may be completed through a relict sand-filled sinkhole or in a locally saturated area of surficial sands.

Site Inspection

The Five-Year Review site inspection was performed on June 19 through 20, 2003. The EPA site inspection team consisted of David Keefer, L'Tonya Spencer, and Bill O'Steen. The Florida Department of Environmental Protection was represented by Kelsey Helton, and Hillsborough County was represented by Patty Berry, David Adams, and Walter Gray. A kick-off meeting was held at the Hillsborough County Solid Waste Management Department offices in downtown Tampa, Florida prior to beginning inspection activities at the Site. Following a Site tour, the EPA team divided as follows: David Keefer performed inspection of the landfill caps, gas collection system, leachate collection system, site perimeter, and landfill records; L'Tonya Spencer inspected the Site Information Repository and performed interviews; and, Bill O'Steen inspected the ground water monitoring network accompanied by Kelsey Helton. At the completion of the site inspection, a debriefing was held with Hillsborough County to discuss observations and findings.

Inspection of the landfill caps, gas collection system, liquids management system, site perimeter, and landfill records was performed on June 19, 2003, and is documented on the Site Inspection Checklist (Attachment 3). The caps for all three landfills (Taylor Road, FDOT, and Hillsborough Heights) were well vegetated and well maintained. Positive drainage was generally maintained throughout the cap surfaces, although a total of six localized areas of ponding (~100-500 square yards) were noted on the Taylor Road and Hillsborough Heights caps. These were generally shallow and likely attributable to subsidence. Repair through sod removal, clay fill, and topsoil/sod replacement was reportedly routine at these landfills. All side slopes were in excellent condition with no erosion or leachate seeps observed. Photographs of the landfill caps are included in Attachment 4. Due to heavy rainfall during the inspection, direct observation of the stormwater drainage and collection system was possible. The drainage swales and culverts were free-flowing and non-erosive off the caps, down the side slopes, and into the detention basins.

The gas collection systems at the Taylor Road and FDOT landfills had undergone significant modifications since the original installations. These modifications included the addition of new gas collection wells, condensate collection sumps, and re-routing of the gas through a central blower and flare system adjacent to the Hillsborough Heights landfill. The aboveground components of the gas collection system (wellheads, sampling points, piping, blowers, and flare) were operable and appeared to be in good condition and maintained. A microturbine generator had been recently installed between the blower and flare as an alternative energy technology demonstration.

Liquids management at the landfills is conducted through collection of condensate from sumps and gas extraction wells, and through a leachate collection system at the Hillsborough Heights landfill. Condensate from the sumps and gas extraction wells is routinely collected at the Taylor Road and Hillsborough Heights landfills, and is stored in the leachate holding tank. Leachate from the Hillsborough Heights landfill is collected from nine sumps and stored in a holding tank pending off-site disposal. The FDOT landfill gas extraction wells reportedly generate no collectable liquids.

Site access control is maintained through the use of a single entrance onto County property and perimeter fencing. The entrance to the Site is from State Route 579, and branches to a County recycling facility in the southwest corner of the property and to the facility maintenance shops and landfill areas to the north and east. Both the recycling facility and maintenance areas are manned, however positive access control (e.g., gate) to the landfill area is not present. A complete inspection of the perimeter fencing (6-ft chain link topped with 3 strands of barbed wire) was performed, and the following observations were noted: one open cut in the chain link fencing; one patched cut in the chain link fencing; seven locations with the barbed wire cut or pulled down; one unlocked gate; and, one section of 4-ft fencing along the southern perimeter. Facility personnel stated that casual trespassing was fairly common, and that trespassing for vandalism and theft had occurred in the facility maintenance area.

Verification of on-site documents and records was performed at the facility maintenance offices. The following documents were readily available and up-to-date: operations and maintenance manuals, as-built drawings, maintenance logs, operations and maintenance training records, gas generation records, ground water monitoring records, and leachate extraction records. The site-specific health and safety plan and Occupational Health and Safety Agency (OSHA) training records were maintained at the downtown County offices. Updates to the health and safety plan were maintained on-site as equipment- or activity-specific memoranda. No formal visitor/access log is maintained, but visitors are expected to report to the facility maintenance office. In general, maintenance of and access to applicable records was good.

Inspection of the ground water monitoring network was performed by Bill O'Steen. The inspection primarily consisted of observations of the access, security, and condition of the well heads and dedicated sampling equipment for the compliance ring monitoring wells and interior monitoring wells. General observations from the inspection include: shallow monitoring wells

completed above the water table should be properly abandoned; well identification markings should be maintained for all wells; and, a check of well condition (e.g., siltation, fouling, re-development) should be included with routine pump maintenance activities. Specific observations from the inspection include: well TR2-S was unlocked; well 32D had a cracked well pad; well NE-23 should be replaced by a properly constructed well (rather than the present open-hole completion); and, the well F-2 replacement needs to be installed as soon as possible. Overall, the inspection of the ground water monitoring network indicates that the monitoring component of the remedy is operating and functional.

During the post-inspection debriefing with Hillsborough County, the following issues were identified. For the landfill caps, routine documentation of settlement-fill activities should be included in the Monthly Operations Reports (i.e., area, thickness, and composition of fill material), and consideration should be given to the installation of settlement plates for re-surveying of the caps. Site access security should be improved by increasing the frequency of inspection and repair of the perimeter fencing, and routinely notifying law enforcement about trespassing. Documentation and records management should include a consolidated update to the health and safety plan, as well as on-site maintenance of OSHA training records. Noted general and specific repairs and improvements to the ground water monitoring network should be scheduled for implementation, and an updated potable well survey of adjacent properties should be conducted to ensure no un-permitted human exposures are taking place. Several positive observations were also discussed; specifically, the County's acquisition of additional properties within the setback zone and the ongoing facility upgrade program were noteworthy.

Interviews

Four interviews were conducted by L'Tonya Spencer on June 19 and 20, 2003 with eleven individuals representing the EPA, Florida Department of Environmental Protection, Hillsborough County, and the Taylor Road Civic Association. Each interview was conducted based on a set of fifteen prepared questions addressing a range of general and technical issues associated with the remedy. These questions and the Interview Records are presented in Attachment 5, and are summarized in Table 6.

Based on the interview comments, Hillsborough County is generally complying with the requirements and intent of the ROD and Consent Decree for this remedy. The remedy appears to be operating as designed, but there remains some public concern and skepticism regarding the effectiveness of the remedy. Specific concerns noted during the interviews that should be addressed include: properly communicating the change in laboratory reporting limits; evaluating potential environmental impacts from nearby properties; trespassers on the Site; dumping around the Site, Mercury detections below remediation levels; ground water issues not within the scope

Table 6: Interview Summary

No.	Name/Organization/Title	Comment Summary
1	David Keefer/EPA/RPM	<ul style="list-style-type: none"> - The County property is of increasing value as undeveloped land, County personnel perform all services, and the County considers relations with adjoining landowners to be amicable (SWMD). - New lab reporting requirements for documenting estimated concentrations between PQL and DL; the County wants to ensure this doesn't surprise citizens or regulators with "new" contaminants (SWMD) - Bi-annual statistical evaluation of ground water trends should revert to annual reporting (FDEP) - Fencing improvements made due to vandalism and theft (SWMD). - FDEP District office has good track record of notifying SWMD of any potable well permit applications. No new potable wells are known in the area, but no survey has been performed (SWMD). - Energy recovery program for methane gas is an innovative re-use activity at the facility through a DOE grant (SWMD). - Dispute with TA Travel Center regarding replacement/repair of monitoring well F-2 continues (SWMD). This should be resolved expeditiously (EPA/FDEP). - A mechanism to monitor/track impacts from potential leaks and spills on the adjacent TA Travel Center, Gator Ford and Interstate 4 properties should be considered (EPA).
	Bill O'Steen/EPA/Sr. Hydrogeologist	
	Kelsey Helton/FDEP/Manager	
	Patricia Berry/Hillsborough County SWMD/Landfill Services Manager	
	David Adams/Hillsborough County SWMD/Environmental Manager	
	Walter Gray/Hillsborough County SWMD/Environmental Scientist	
2	Wayman Rose/Hillsborough County SWMD/Sr. Crewleader	<ul style="list-style-type: none"> - Ongoing work on odor control, but no elevated levels have been detected. - Erosion between FDOT and Taylor Road landfills is being addressed by significant re-sloping and re-grading effort. - Grass is mowed as needed, and no fertilizers, herbicides, or pesticides are used.
3	Andrew Baloon/Hillsborough County SWMD/Environmental Specialist I	<ul style="list-style-type: none"> - Vagrants have been seen on the property. - Some dumping occurs near the property. - Field crew are encouraged to report anything they observe. - Field crew is not aware of any complaints from adjacent property owners. - SWMD is diligent in compliance with safety and health requirements and quality assurance requirements.
	Dennis Zelman/Hillsborough County SWMD/Environmental Specialist I	

4	Cam Oberting/Taylor Road Civic Association/President	<ul style="list-style-type: none"> - SWMD routinely checks potable wells, but a number of adjacent landowners do not have County water. - Mercury has been detected in private wells. - Only a limited number of property owners were connected to County water <i>[the impression is that this is fewer than expected/promised]</i>. - The SWMD ground water consultant is not trusted. - A nearby borrow pit <i>[not associated with Taylor Road Landfill]</i> was permitted without testing and over the objections of the local residents <i>[offered as an example of the County's unwillingness/inability to look out for the interests of the community]</i>. - There have been no recent problems with landfill gas.
	Lee Oberting/Taylor Road Civic Association/Board Member	<ul style="list-style-type: none"> - Potable well sampling is stopped after a property is placed on County water, this doesn't help track down the Mercury problem. - SWMD does a good job communicating with residents and correcting problems brought to their attention. - Oil and grease was detected in groundwater, but SWMD stopped testing for it because the landfill was not considered to be the source. Records show that oil and grease were disposed at the landfill, but SWMD is ignoring this. - SWMD also has stopped testing homes with low pH. - Filters are on well water because of contamination, but not everyone can afford filters. - Leachate shows that the landfill caps are not impermeable, does SWMD intend to collect leachate forever?

of this action (pH and oil & grease); and, the trigger for provision of County water. Successes that have occurred include: overall decreasing trends in ground water contaminants; demonstration of the effectiveness of the well permit institutional control; and, successful efforts for reuse of the County property. Hillsborough County should continue and extend its efforts to communicate informally and formally with nearby landowners to address the concerns and successes at the Site. Additionally, EPA will issue a Fact Sheet at the completion of the Five-Year Review to report the results of the review and address community concerns.

VII. Technical Assessment

The technical assessment of the performance and protectiveness of the Taylor Road Landfill Superfund Site remedy is based on historical information and data collected during the Five-Year Review process. As presented in the current Comprehensive Five-Year Review Guidance (EPA, 2001), this assessment is based on how each of three questions is answered. These questions are: A - Is the remedy functioning as intended by the decision documents?; B - Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at

the time of remedy selection still valid?; and, C - Has any other information come to light that could call into question the protectiveness of the remedy?. The EPA team for the Five-Year Review met on July 2, 2003 to answer these questions, and the answers, along with supporting rationale, are discussed below.

Question A: Is the Remedy Functioning as Intended by the Decision Documents?

The remedy selected in the ROD, as constructed by Hillsborough County and verified in the Final Construction Report, continues to function as intended. Ground water monitoring has been and continues to be performed to evaluate the progress of natural attenuation and to determine the need for contingent actions. Natural attenuation of contaminants in ground water is demonstrated to be occurring by the monitoring data. However, the contingent action criteria for expansion of the ground water monitoring compliance ring (two successive exceedances in a ring well) has been triggered on three occasions: October 1999 - addition of wells C-6 and C-7; April 2000 - addition of wells C-8 and C-9; and, May 2001 - addition of well C-10. Following the April 2000 expansion, one additional landowner was offered hook-up to County water, but this was refused. The contingent action criteria for requiring active groundwater treatment at the property boundary (regulatory evaluation of annual statistical and other data) has not been triggered. Currently, 14 compliance ring wells, 13 interior wells, and 1 background well are routinely monitored. Contaminant concentrations in some wells may have reached asymptotic levels at or near the remediation levels; however, continued operation and maintenance of the landfill caps is clearly necessary for these results to be sustained.

Current monitoring and operation and maintenance practices for the ground water remedy are generally adequate to maintain the effectiveness of the remedy. There were no indicators of problems that would jeopardize the performance of the remedy. There is room for improvement in the areas of well maintenance and in the implementation of institutional controls. There also may exist opportunities in the near future for optimization through reducing the number of interior wells sampled and/or the number of analytes requested. The frequency of monitoring and reporting is expected to remain unchanged for the foreseeable future. As previously noted, a significant element of the continued success of the ground water remedy is continuity in the operation and maintenance of the landfills. The commitment by Hillsborough County through the existing RCRA permit to the operation and maintenance of the landfills appears firm, and no problems are anticipated in this regard for the foreseeable future. Site access controls at the landfills show evidence of recurrent failure, but this is not expected to have resulted in any human exposure to ground water.

The answer to Question A is Yes.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of remedy selection still valid?

Changes have occurred in both the exposure assumptions and the cleanup levels established in the ROD and used in the baseline risk assessment, but the validity of the underlying basis for action and remediation levels remains sound. The changes in exposure assumptions are based on changes in land use in adjacent properties from residential and agricultural to commercial; a less restrictive type of use. Additionally, the baseline risk assessment was used to identify contaminant suites (i.e., volatile organic compounds and metals) and media posing excess risk, but contaminant-specific remediation levels were based on Florida Department of Environmental Protection standards. The changes in cleanup levels were associated with Florida Department of Environmental Protection revision of certain Minimum Criteria for Organoleptics constituents in the Ground Water Cleanup Target Levels (FAC 62-777). A total of six constituents were revised in the Ground Water Cleanup Target Levels (5 downward and 1 upward relative to the Minimum Criteria for Organoleptics standard), and none of these constituents has been detected at the Taylor Road Landfill Site. Changes to applicable, or relevant and appropriate standards are summarized in Tables 7 through 9.

Table 7: Changes in Chemical-Specific Standards

Contaminant	Media	Cleanup Level	Standard		Citation/Year
Acrolein	ground water	110 ug/L	Previous	110 ug/L	<i>Groundwater Guidance Concentrations (FDEP, 1994)</i>
			New	14 ug/L	<i>Target Cleanup Level (FAC 62-777, 1999)</i>
2,4 Dichlorophenol	ground water	4 ug/L	Previous	4 ug/L	<i>Groundwater Guidance Concentrations (FDEP, 1994)</i>
			New	0.5 ug/L	<i>Target Cleanup Level (FAC 62-777, 1999)</i>
3,4 Dichlorophenol	ground water	10 ug/L	Previous	10 ug/L	<i>Groundwater Guidance Concentrations (FDEP, 1994)</i>
			New	0.5 ug/L	<i>Target Cleanup Level (FAC 62-777, 1999)</i>
2,4-Dimethylphenol	ground water	400 ug/L	Previous	400 ug/L	<i>Groundwater Guidance Concentrations (FDEP, 1994)</i>
			New	140 ug/L	<i>Target Cleanup Level (FAC 62-777, 1999)</i>

Naphthalene	ground water	6.8 ug/L	Previous	6.8 ug/L	Groundwater Guidance Concentrations (FDEP, 1994)
			New	20 ug/L	Target Cleanup Level (FAC 62-777, 1999)
Vinyl Acetate	ground water	250 ug/L	Previous	250 ug/L	Groundwater Guidance Concentrations (FDEP, 1994)
			New	88 ug/L	Target Cleanup Level (FAC 62-777, 1999)

Table 8: Changes In Action-Specific Requirements

Action	Requirement		Prerequisite	Citation/Year
Ground water remediation	Previous	Florida Air Pollution Rules	air emissions during remedial activities	FAC 17-2.1
	New	No applicable changes		

Table 9: Changes in Location-Specific Requirements

Location	Requirement		Prerequisite	Citation/Year
Taylor Road Landfill Site	Previous	Hazardous Waste Warning Signs	perimeter and access control	FAC 17-736
	New	No applicable changes		
Taylor Road Landfill Site	Previous	Endangered Species Act	Identification of species or habitat	50 CFR 402
	New	No applicable changes		

In general, the remedy is progressing as expected. No changes in site conditions, contaminant characteristics, exposure pathways, or relevant standards were observed or are known to have occurred that would call into question the ongoing protectiveness of the remedy. A periodic private well survey should be performed to ensure no un-permitted withdrawals are taking place in the vicinity of the landfill and to validate the exposure assumptions.

The answer to Question B is Yes.

Question C: Has Any Other Information Come to Light that Could Call into Question the Protectiveness of the Remedy?

No new information has come to light that would call into question the protectiveness of the remedy. The presence of the Site within the Brandon Karst terrain presents an ongoing threat of natural disaster through sinkhole collapse beneath one of the landfills. This threat was recognized during the decision-making process for both the RCRA corrective action and CERCLA remediation. Since construction of the landfill caps, subsidence of the caps appears to be consistent with volume loss through gas collection and settling. Additionally, this portion of Florida has experienced both drought and above-average rainfall since remedy construction that would tend to exacerbate areas susceptible to karst failure. During the monitoring period, no indication that sinkhole collapse is imminent or likely has been observed.

The answer to Question C is No.

VIII. Issues

During the course of the Five-Year Review document and data review, site inspection, and interviews, a number of issues were identified pertaining to remedy effectiveness. These issues and their impact on remedy protectiveness are summarized in Table 10.

Table 10: Issues

Issues	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
(1) Site access security (monitoring & maintenance of fences)	No	Yes
(2) Ground water monitoring well maintenance	No	Yes
(3) Potential for un-permitted potable well installation in adjoining properties	No	Yes
(4) Operations & maintenance of landfill caps, leachate collection, gas collection and storm water management systems under RCRA	No	Yes
(5) Annual reporting for Ground Water Quality Statistical Evaluations	No	Yes
(6) Ground water quality concerns (mercury, oil & grease, and pH) of adjoining land owners should be affirmatively addressed	No	Potentially
(7) Quantitative measurement and tracking of fill activities in landfill cap settlement areas	No	No

(8) Monitoring/evaluation of potential environmental impacts from adjacent properties (commercial activities and dumping) should be performed	No	No
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IX. Recommendations and Follow-up Actions

Based on the issues identified during the Five-Year Review, recommendations and follow-up actions for the Taylor Road Landfill have been identified. These are summarized in Table 11.

Table 11: Recommendations and Follow-up Actions

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	Future
(1)	- Repair cut and damaged fences - Institute daily perimeter security checks (per 1983 CD)	Hillsborough County SWMD	EPA	11/1/2003	No	Yes
(2)	- Perform routine maintenance on wells TR2-S and S2D - Refit/replace well NE-23 - Refit/replace well F-2 - Abandon unused shallow wells - Look and clearly label all wells - Add well rehabilitation check to pump repair process	Hillsborough County SWMD	EPA	11/1/2003	No	Yes
(3)	Perform potable well survey on adjacent parcels (approximately 1-mile radius of Site)	Hillsborough County SWMD	EPA	11/1/2003	No	Yes
(4)	Consideration of ground water impacts during RCRA permit renewal negotiation	FDEP District Office	EPA	9/15/2013	No	Yes
(5)	Return to Annual reporting and evaluation of ground water trends	Hillsborough County SWMD	EPA and FDEP	6/27/2004	No	Yes

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	Future
(6)	Prepare Fact Sheet presenting results of Five-Year Review and addressing community ground water quality concerns	EPA	EPA and FDEP	10/1/2003	No	Potential
(7)	<ul style="list-style-type: none"> - Perform routine civil surveying of landfill cap surfaces (bi-annual or when significant settlement is observed) - Include quantitative estimate of settlement fill activities (area, thickness and location) 	Hillsborough County SWMD	EPA	5/1/2004 (survey) 10/1/2003 (reports)	No	No
(8)	<ul style="list-style-type: none"> - Inventory products and wastes managed on adjacent or nearby properties - Request notification from FDEP District Office of nearby spills or releases - Report/cleanup illegal dumping on adjacent properties 	Hillsborough County SWMD	EPA	11/1/2003	No	No

X. Protectiveness Statement

The remedy at the Taylor Road Landfill currently protects human health and the environment because ground water monitoring at the compliance ring ensures contingent measures can be taken prior to impacts to domestic supply wells, institutional controls restrict the installation of new domestic supply wells in the impacted area, post-closure care of the landfills under RCRA minimizes ongoing impacts to the aquifer, and natural attenuation is demonstrated to be occurring. However, in order for the remedy to remain protective in the long-term, the following actions need to be taken: repair fencing and improve enforcement of site access controls; improve routine maintenance of monitoring wells; perform a potable well survey in the vicinity of the site to ensure institutional controls are effective; ensure the long-term operation and maintenance of the landfills; resume annual ground water quality statistical evaluations; and, improve responsiveness to ongoing community concerns.

Overall, Hillsborough County Solid Waste Management Department has done a commendable job of implementing the remedy and integrating RCRA and CERCLA operation and maintenance requirements for the Site. While these follow-up actions, if not implemented, would be expected to have a negative impact on the long-term effectiveness of the remedy, it is expected that Hillsborough County will be responsive to these recommendations. Most of the recommendations and follow-up actions for the Site are being implemented by Hillsborough County based on the debriefing at the conclusion of the site inspection.

XI. Next Review

The next Five-Year Review for the Taylor Road Landfill Superfund Site will be a statutory review, and will be completed on August 11, 2008.

ATTACHMENT 1
SITE FIGURES

Figure 1 - Aerial Photograph of Taylor Road Landfill Site with Site Boundary and Compliance Monitoring Wells

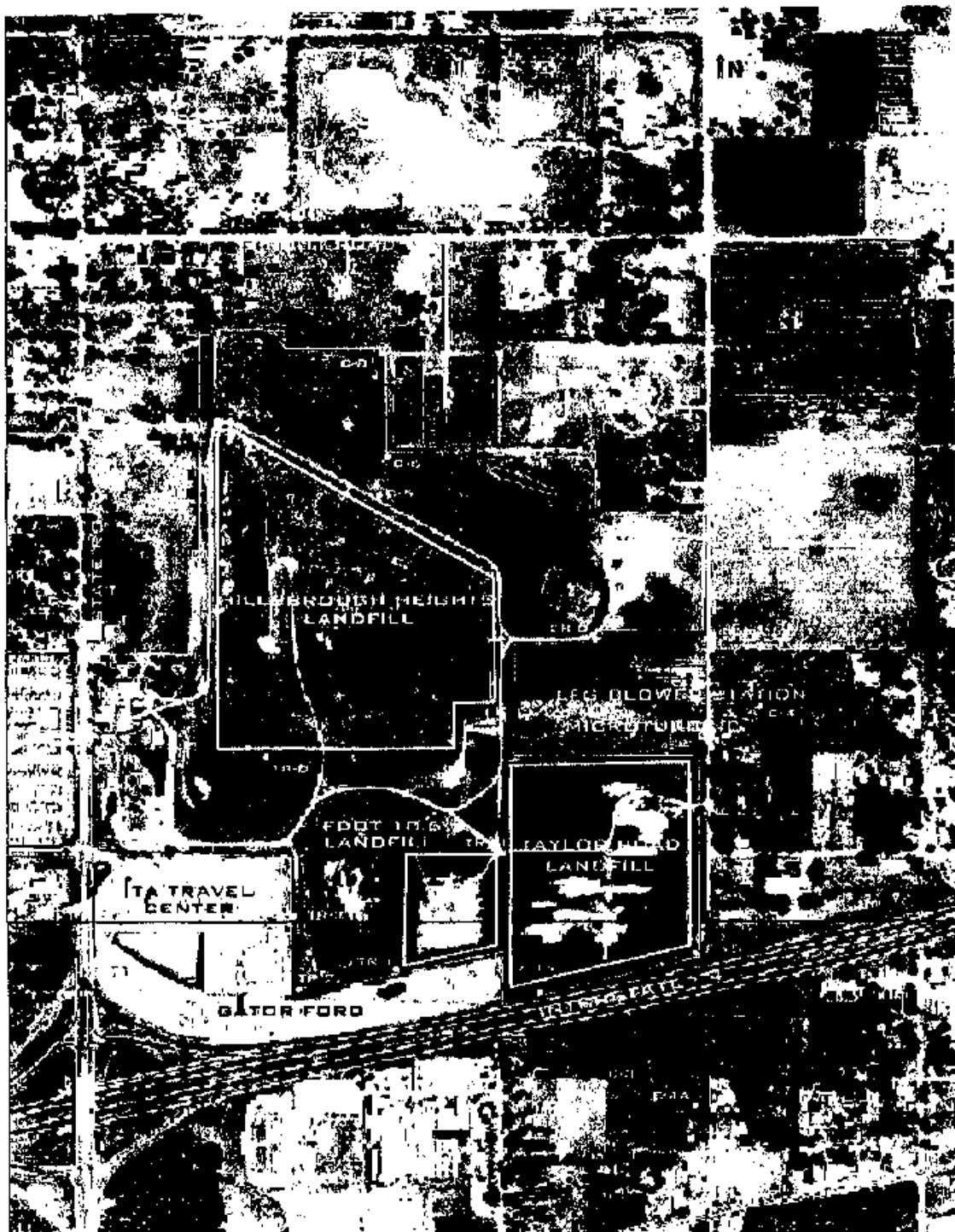


Figure 2. Trichloroethene Concentration Trends

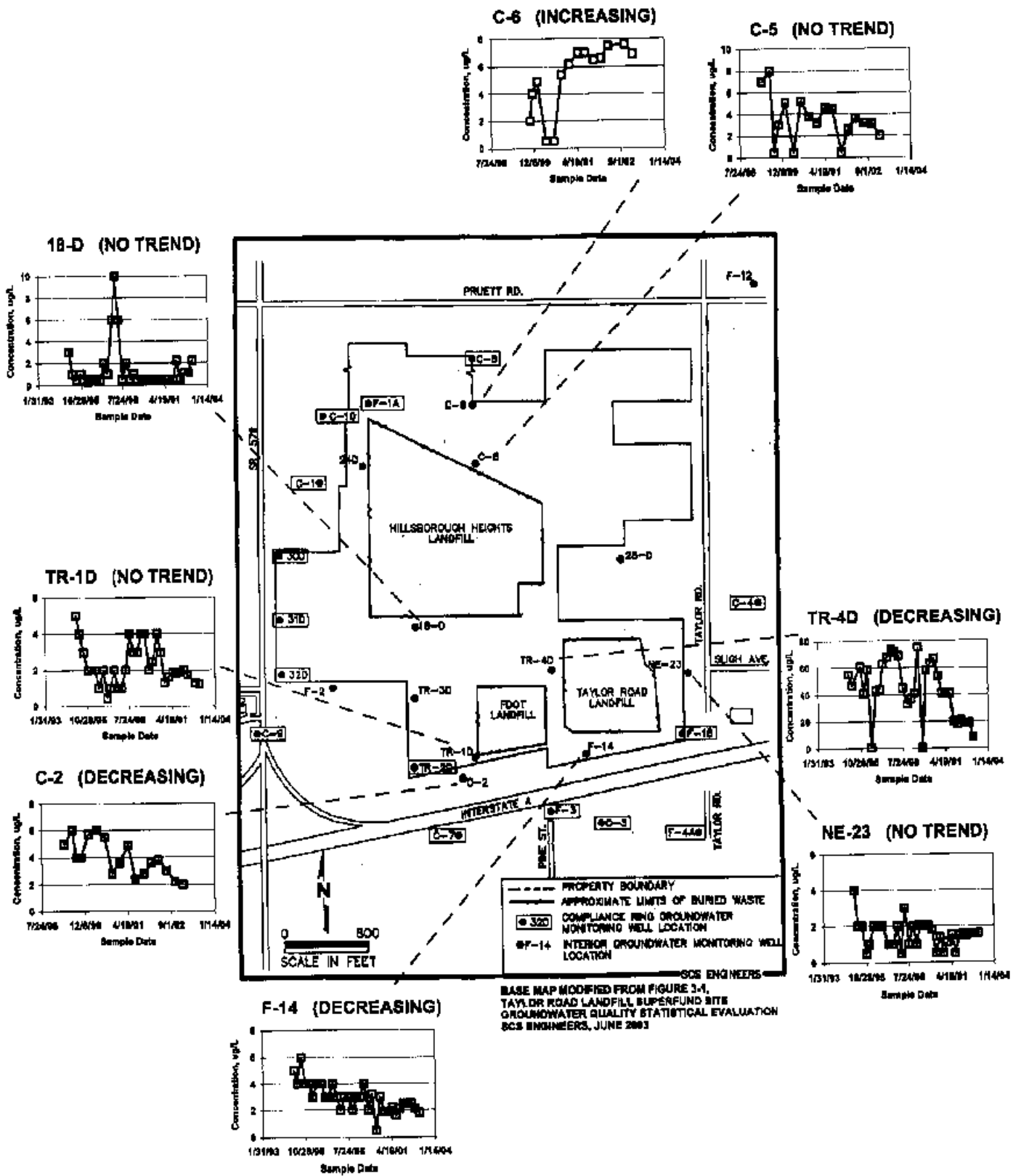


Figure 3. cis 1,2-Dichloroethene Concentration Trends

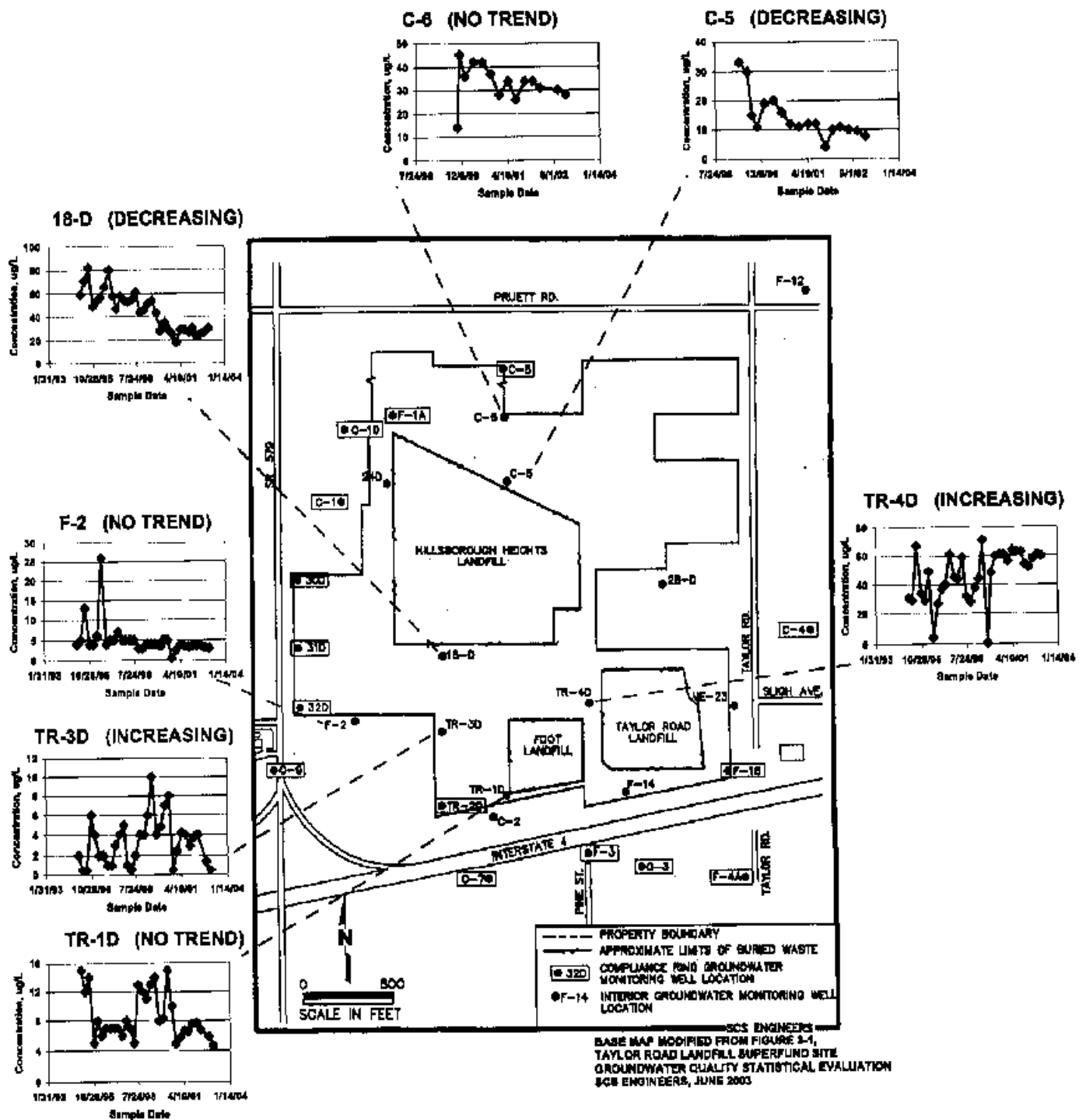


Figure 4. Vinyl Chloride Concentration Trends

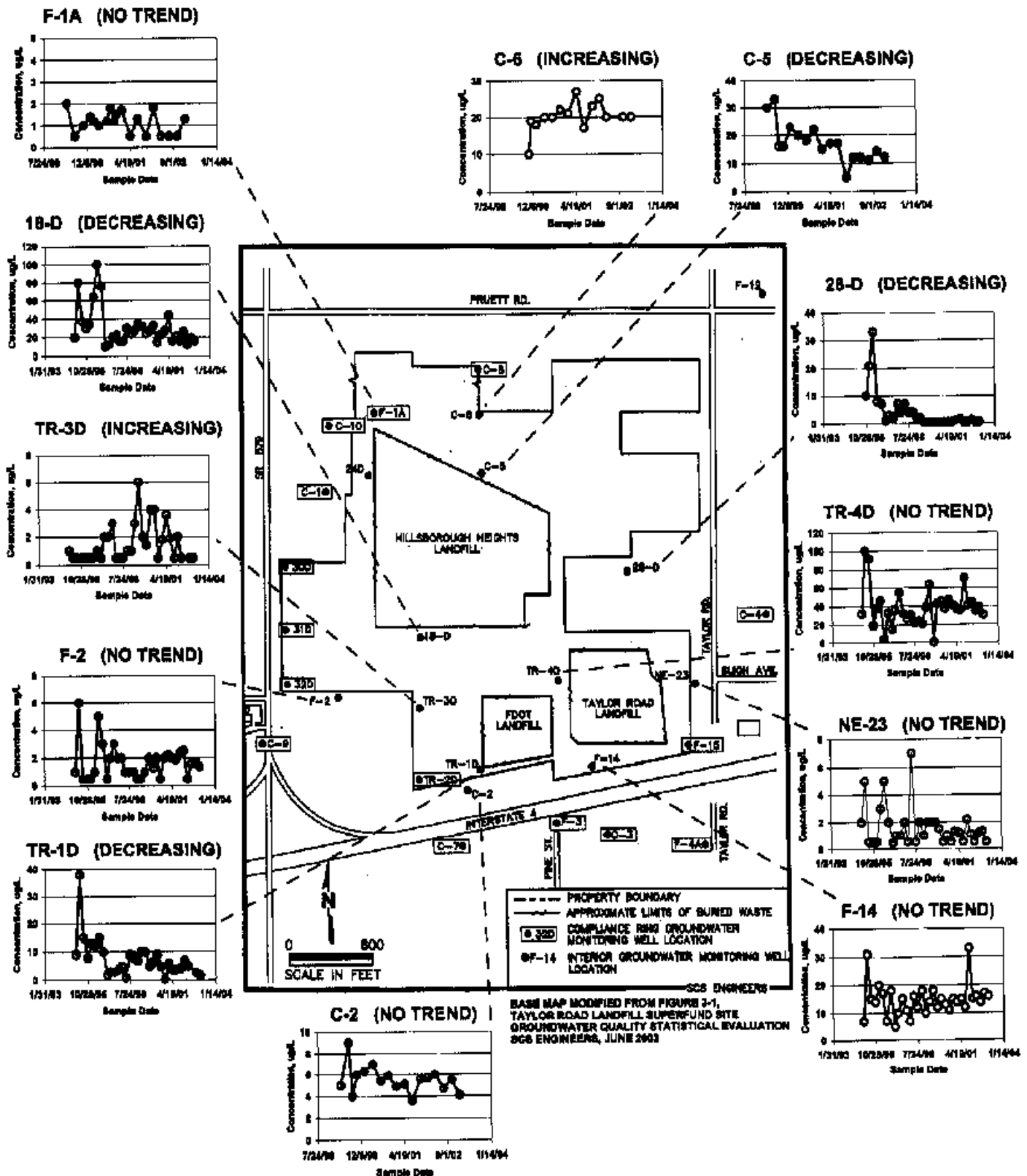


Figure 5. 1,1-Dichloroethene Concentration Trends

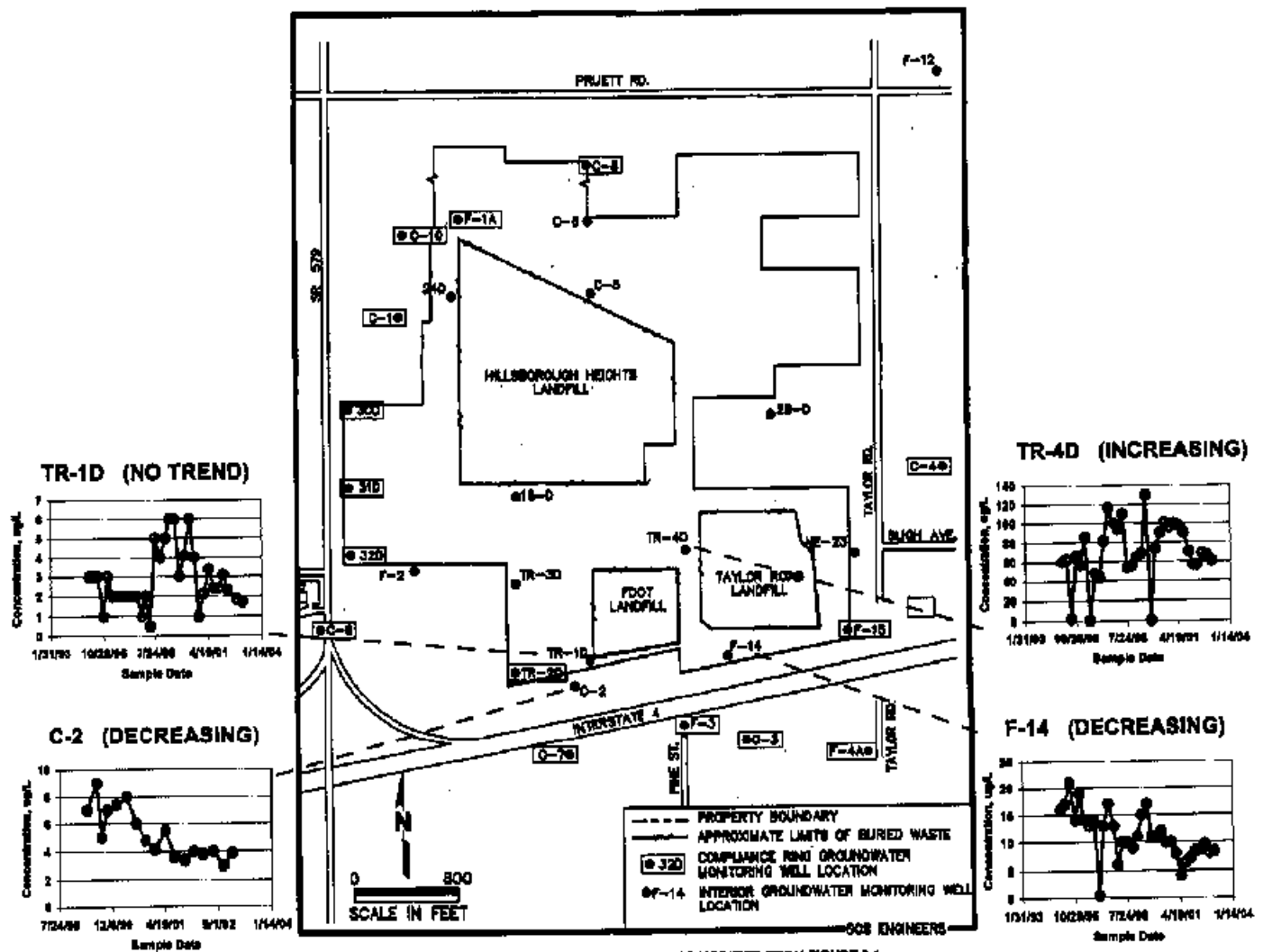


Figure 6. Benzene Concentration Trends

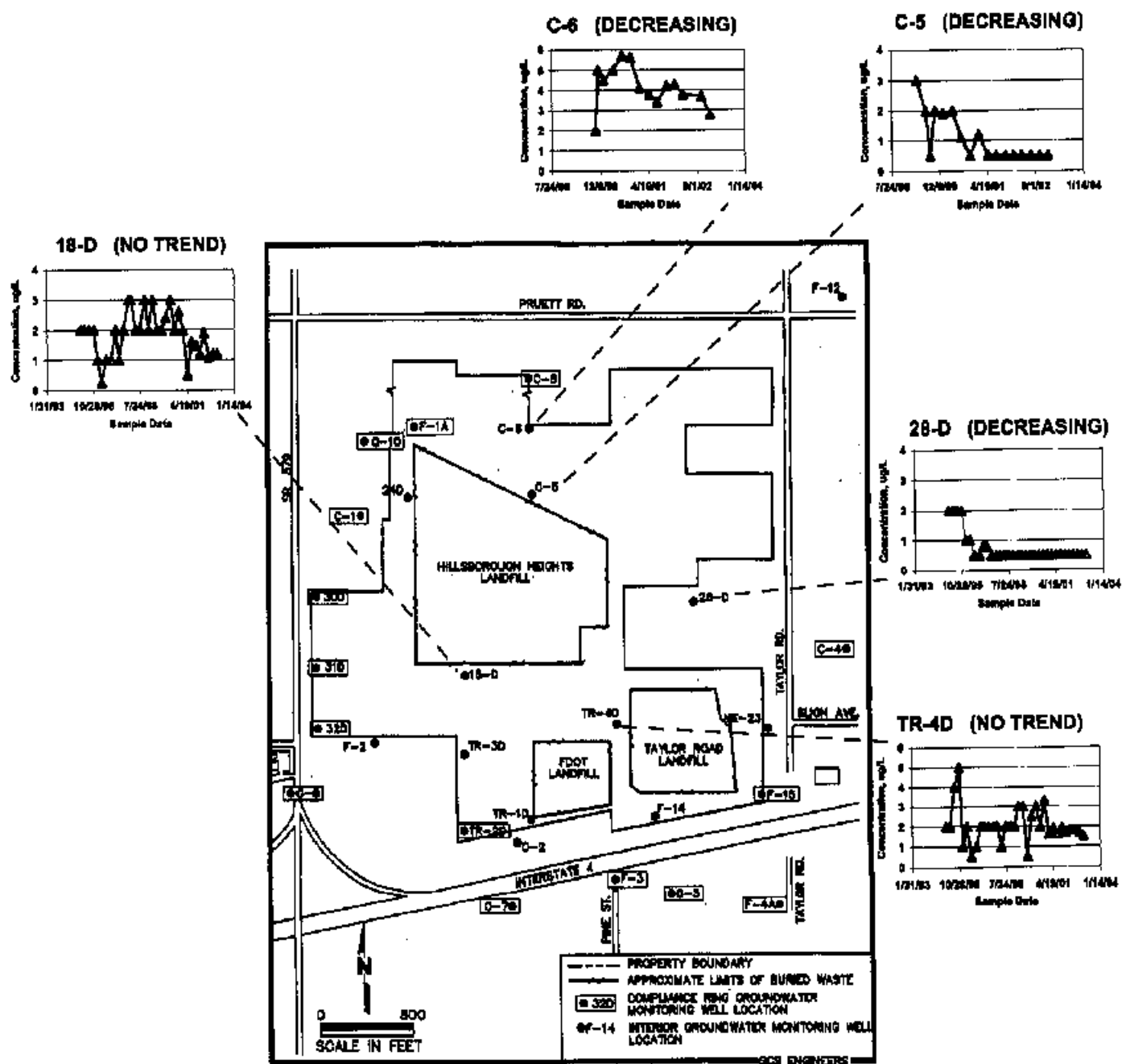


Figure 7. Manganese Concentration Trends

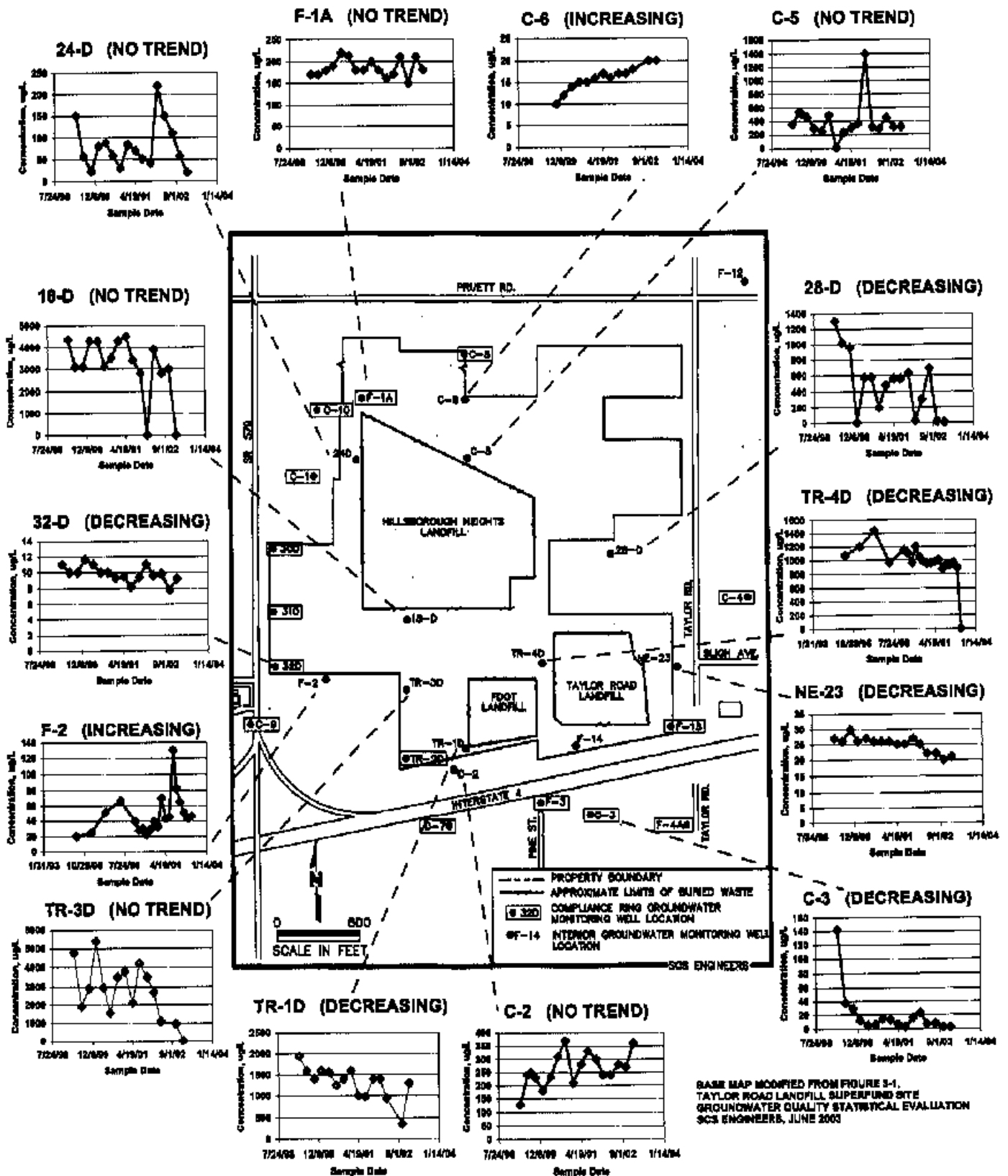
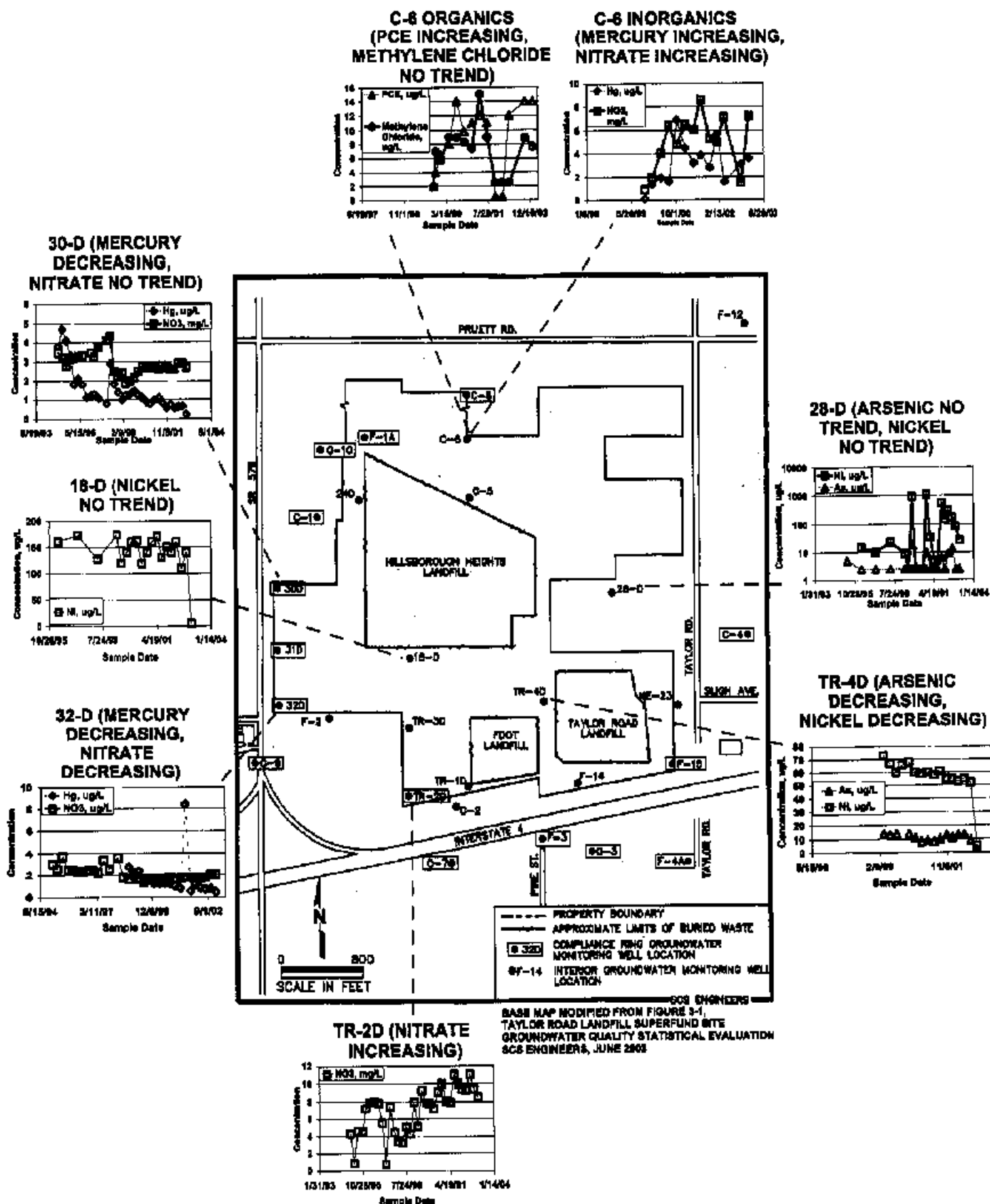


Figure 8. Concentration Trends for Miscellaneous Contaminants



ATTACHMENT 2
LIST OF DOCUMENTS REVIEWED

CDM Federal Programs Corporation, Community Relations Plan, June 26, 1989

CDM Federal Programs Corporation, Final Baseline Risk Assessment, June 1994

Engineering-Science (ES), Taylor Road Landfill Remedial Alternatives Evaluation, July 1983

Environmental Protection Agency Region Four, Administrative Order by Consent for Remedial Investigation/Feasibility Study, February 1, 1993

Environmental Protection Agency Region Four, Administrative Order on Consent, September 18, 1996

Environmental Protection Agency Region Four, Consent Decree, April 15, 1983

Environmental Protection Agency Region Four, Consent Decree-Remedial Design/Remedial Assessment, May 11, 1998

Environmental Protection Agency Region Four, Record of Decision, September 29, 1995

Environmental Protection Agency Region Four, Explanation of Significant Differences,

Environmental Protection Agency Region Four, Superfund Proposed Plan Fact Sheet, July 1995

Environmental Protection Agency, Unilateral Administrative Order of Consent, February 15, 1995

ERM-South, Inc., Final Feasibility Study Report, June 1995

ERM-South, Inc., Final Remedial Investigation Report, May 1995

Hillsborough County Solid Waste Management Department (HCSWMD), Final Construction Report, April 16, 1999

Hillsborough County Solid Waste Management Department (SWMD), Hillsborough Heights Domestic Supply Wells Analytical Data Report, January 1997

Hillsborough County Solid Waste Management Department (SWMD), Hillsborough Heights Domestic Supply Wells Analytical Data Report, February 1997

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Hillsborough County Solid Waste Management Department (SWMD), Remedial Action Work
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Hillsborough County Department of Solid Waste, Hillsborough Heights/Taylor Road Landfills
Monitor Well Analysis, January 1996

Hillsborough County Department of Solid Waste, Hillsborough Heights/Taylor Road Landfills
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Hillsborough County Solid Waste Management Department (SWMD), Taylor Road Landfill Superfund Site Analytical Data Report, April 1999

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Hillsborough County Solid Waste Management Department (SWMD), Taylor Road Landfill
Superfund Site Analytical Data Report, April 2003

ATTACHMENT 3
SITE INSPECTION CHECKLIST

Site Inspection Checklist

I. SITE INFORMATION	
Site name: Taylor Road Landfill	Date of inspection: June 19-20, 2003
Location and Region: Tampa, Hillsborough County, Florida - EPA Region 4.	EPA ID: FLD 980 494 959
Agency, office, or company leading the five-year review: EPA Region 4 (WMD/SSMB/NFL)	Weather/temperature: Overcast/rain/-85 degrees F
Remedy Includes: (Check all that apply) <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 45%;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input checked="" type="checkbox"/> Other <u>Impact cap system as part of overall groundwater protection.</u> </div> <div style="width: 45%;"> <input checked="" type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </div> </div>	
Attachments: <input type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached	
II. INTERVIEWS (Check all that apply)	
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> 1. O&M site manager <u>Wayman Rose</u> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Name Title </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. <u>813-744-5535</u> </div> Problems, suggestions; <input checked="" type="checkbox"/> Report attached <u>Interview form.</u> </div> <div style="width: 35%; text-align: center;"> <u>Sr. Crew Leader</u> <u>6/19/03</u> Date </div> </div>	
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> 2. O&M staff <u>(see attached Interview Form)</u> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Name Title </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ </div> Problems, suggestions; <input checked="" type="checkbox"/> Report attached _____ </div> <div style="width: 35%; text-align: center;"> _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ </div> </div>	

- | | | | |
|---|---|-------|---------|
| Agency | FDEP | | |
| Contact | Kelley Helton | | 6/19/03 |
| | Name | Title | Date |
| Problems; suggestions; <input type="checkbox"/> Report attached | DEP does not concur with EPA ESD removing | | |
| secondary MCL or ARARs for the site. | | | |
| Agency | | | |
| Contact | | | |
| | Name | Title | Date |
| Problems; suggestions; <input type="checkbox"/> Report attached | | | |
| Agency | | | |
| Contact | | | |
| | Name | Title | Date |
| Problems; suggestions; <input type="checkbox"/> Report attached | | | |
| Agency | | | |
| Contact | | | |
| | Name | Title | Date |
| Problems; suggestions; <input type="checkbox"/> Report attached | | | |

- Other interviews performed as a separate activity (see Interview Records)

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1.	O&M Documents <input checked="" type="checkbox"/> O&M manual <input checked="" type="checkbox"/> As-built drawings <input checked="" type="checkbox"/> Maintenance logs	<input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A	Remarks <u>As-built include improvements, maintenance records excellent.</u>
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input type="checkbox"/> N/A <input type="checkbox"/> N/A	Remarks <u>Maintained at county offices downtown. SOPs address must "reasonably anticipatable" events not consolidated in a single plan.</u>
3.	O&M and OSHA Training Records	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A	Remarks <u>Maintained at county offices downtown</u>
4.	Permits and Service Agreements <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits	<input type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A	Remarks <u>* leachate treatment offsite at Valrico Plant (county-owned)</u>
5.	Gas Generation Records	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A	Remarks _____
6.	Settlement Monument Records	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	Remarks <u>Not a feature of this facility. Re-surveying done as needed / Ponding is corrected as needed.</u>
7.	Groundwater Monitoring Records	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A	Remarks _____
8.	Leachate Extraction Records	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A	Remarks _____
9.	Discharge Compliance Records <input type="checkbox"/> Air <input type="checkbox"/> Water (effluent)	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A	Remarks _____
10.	Daily Access/Security Logs	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	Remarks <u>Visitors required to report at office; no log maintained.</u>

IV. O&M COSTS

1. **O&M Organization**
- ☐ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house ☐ Contractor for Federal Facility
☒ Other Hillsborough County is PRP and O & M organization is primarily in-house staff with some contract support.

2. **O&M Cost Records** -County to provide info as follow-up
- ☒ Readily available ☒ Up to date
☒ Funding mechanism/agreement in place
 Original O&M cost estimate N/A ☐ Breakdown attached

Total annual cost by year for review period if available

From <u> * </u>	To <u> </u>		<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From <u> </u>	To <u> </u>		<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From <u> </u>	To <u> </u>		<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From <u> </u>	To <u> </u>		<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From <u> </u>	To <u> </u>		<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	

* Maintained as part of county budget, cost spreadsheets provided.

3. **Unanticipated or Unusually High O&M Costs During Review Period**
- Describe costs and reasons: Improvements to gas collection system at TRLF (routing to Hillsborough Heights); new gas wells at TRLF, drainage improvement between FDOT and TRLF. - \$500,000 in improvements.

V. ACCESS AND INSTITUTIONAL CONTROLS ☐ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☒ Location shown on site map ☒ Gates secured ☐ N/A
- Remarks Site reasonably secure, some damage to fences and gates (accidents/break-in, theft). One open cut identified.

B. Other Access Restrictions

1.	Signs and other security measures <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A Remarks <u>No trespassing sign every 50 feet along fence.</u> <hr/>	
C. Institutional Controls (ICs)		
1.	Implementation and enforcement (Site Access Security) Site conditions imply ICs not properly implemented <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A Site conditions imply ICs not being fully enforced <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Type of monitoring (e.g., self-reporting, drive by) <u>O&M personnel on-site daily/self-reporting</u> Frequency <u>daily (self-report)/monthly (visual inspection)</u> Responsible party/agency <u>Hillsborough County</u> Contact <u>Wayman Rose</u> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Name Title Date Phone no. </div> Reporting is up-to-date <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Reports are verified by the lead agency <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Specific requirements in deed or decision documents have been met <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Violations have been reported <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Other problems or suggestions: <input type="checkbox"/> Report attached <u>Reporting is primarily internal to Hillsborough County, specific notification of each break of perimeter fencing not made to EPA, nor would it be useful. Annual summary would be adequate.</u>	
2.	Adequacy <input checked="" type="checkbox"/> ICs are adequate <input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A Remarks <u>Improvement to site access physical security may be warranted. Groundwater use restrictions seem to be working. Periodical well inventory in/adjacent to buffer may be warranted.</u>	
D. General		
1.	Vandalism/trespassing <input checked="" type="checkbox"/> Location shown on site map <input type="checkbox"/> No vandalism evident Remarks <u>Both vandalism (including theft) and trespassing appear fairly common. Numerous locations along fence line apparently used for illegal access. O&M staff report recurrent trespassing.</u>	
2.	Land use changes on site <input type="checkbox"/> N/A Remarks <u>Sold small strip of land to TA America, leased ~11 acres to TRAC, leased ~0.5 acre to County sheriff's office.</u>	
3.	Land use changes off site <input type="checkbox"/> N/A Remarks <u>Some new businesses established in SW adjacent property (TA America, Gator Ford).</u>	
VI. GENERAL SITE CONDITIONS		

A. Roads <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	Roads damaged Remarks _____ _____ _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Roads adequate <input type="checkbox"/> N/A	
B. Other Site Conditions			
Remarks _____ _____ _____ _____ _____			
VII. LANDFILL COVERS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
A. Landfill Surface			
1.	Settlement (Low spots) Areal extent _____ Depth <u>0.5-1 ft</u> Remarks <u>Low areas (100-500 meters square) noted on TRLF and HH, actively being addressed.</u>	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident	
2.	Cracks Lengths _____ Widths _____ Depths _____ Remarks _____ _____ _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Cracking not evident	
3.	Erosion Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Erosion not evident	
4.	Holes Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Holes not evident	

5.	Vegetative Cover <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks _____	<input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> Cover properly established <input checked="" type="checkbox"/> No signs of stress
6.	Alternative Cover (armored rock, concrete, etc.) Remarks _____	<input checked="" type="checkbox"/> N/A
7.	Bulges Areal extent _____ Height _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Bulges not evident
8.	Wet Areas/Water Damage <input checked="" type="checkbox"/> Wet areas <input checked="" type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____	<input type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent <u>6 X 100-500 yd3</u> <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <u>Actively filled to remediate (top soil removed, clay added, topsoil and vegetation re-established).</u>
9.	Slope Instability Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of slope instability
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1.	Flows Bypass Bench Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
2.	Bench Breached Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A or okay
3.	Bench Overtopped Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A or okay
C. Letdown Channels <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)		
1.	Settlement Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of settlement

2.	Material Degradation <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of degradation Material type _____ Areal extent _____ Remarks _____ _____
3.	Erosion <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of erosion Areal extent _____ Depth _____ Remarks _____ _____
4.	Undercutting <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of undercutting Areal extent _____ Depth _____ Remarks _____ _____
5.	Obstructions Type _____ <input checked="" type="checkbox"/> No obstructions <input type="checkbox"/> Location shown on site map Areal extent _____ Size _____ Remarks _____ _____
6.	Excessive Vegetative Growth Type _____ <input checked="" type="checkbox"/> No evidence of excessive growth <input checked="" type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map Areal extent _____ Remarks _____ _____
D. Cover Penetrations <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Gas Vents <input checked="" type="checkbox"/> Active <input type="checkbox"/> Passive <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks <u>Leakage checked quarterly.</u> _____
2.	Gas Monitoring Probes <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____
3.	Monitoring Wells (within surface area of landfill) <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks <u>Interior wells have some maintenance issues, shallow wells are non-functional.</u> _____
4.	Leachate Extraction Wells <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks <u>Within facility with restricted access.</u> _____

5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed	<input type="checkbox"/> N/A
Remarks <u>Not present (pre-dates routine use).</u>				
E. Gas Collection and Treatment <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A				
1.	Gas Treatment Facilities <input checked="" type="checkbox"/> Flaring <input checked="" type="checkbox"/> Thermal destruction <input checked="" type="checkbox"/> Collection for reuse <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks <u>Micro-turbine installed 3/03 with DOE grant.</u>			
2.	Gas Collection Wells, Manifolds and Piping <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____			
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks <u>Structure readings performed quarterly.</u>			
F. Cover Drainage Layer <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A				
1.	Outlet Pipes Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____			
2.	Outlet Rock Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____			
G. Detention/Sedimentation Ponds <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A				
1.	Siltation Areal extent <u>8-9 acres</u> Depth <u>5-10 feet</u> <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Siltation not evident Remarks <u>Four on site, typically dry.</u>			
2.	Erosion Areal extent _____ Depth _____ <input checked="" type="checkbox"/> Erosion not evident Remarks _____			
3.	Outlet Works <input type="checkbox"/> Functioning <input checked="" type="checkbox"/> N/A Remarks <u>Evaporation/percolation.</u>			
4.	Dam <input type="checkbox"/> Functioning <input checked="" type="checkbox"/> N/A Remarks _____			
H. Retaining Walls <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A				

1.	Deformations Horizontal displacement _____ Rotational displacement _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Deformation not evident	<input type="checkbox"/> Deformation not evident
2.	Degradation Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Degradation not evident	<input type="checkbox"/> Degradation not evident
I. Perimeter Ditches/Off-Site Discharge <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	Siltation Areal extent _____ Depth _____ Remarks <u>Around landfill, route to detention basins.</u>	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Siltation not evident	<input checked="" type="checkbox"/> Siltation not evident
2.	Vegetative Growth <input checked="" type="checkbox"/> Vegetation does not impede flow Areal extent _____ Type _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A	<input type="checkbox"/> N/A
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Erosion not evident	<input checked="" type="checkbox"/> Erosion not evident
4.	Discharge Structure <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks <u>Small concrete pad or rip rap at discharge.</u>	<input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A	<input type="checkbox"/> N/A
VIII. VERTICAL BARRIER WALLS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Settlement Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident	<input type="checkbox"/> Settlement not evident
2.	Performance Monitoring Type of monitoring _____ <input type="checkbox"/> Performance not monitored Frequency _____ <input type="checkbox"/> Evidence of breaching Head differential _____ Remarks _____	<input type="checkbox"/> Evidence of breaching	<input type="checkbox"/> Evidence of breaching
IX. GROUNDWATER/SURFACE WATER REMEDIES <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
A. Groundwater Extraction Wells, Pumps, and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Pumps, Wellhead Plumbing, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____	<input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A	<input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A

2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____	
B. Surface Water Collection Structures, Pumps, and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Collection Structures, Pumps, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____	
C. Treatment System <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Treatment Train (Check components that apply) <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Metals removal <input type="checkbox"/> Air stripping <input type="checkbox"/> Filters <input type="checkbox"/> Additive (e.g., chelation agent, flocculant) <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance </div> <div> <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ </div> <div> <input type="checkbox"/> Bioremediation </div> </div> Remarks _____ _____	
2.	Electrical Enclosures and Panels (properly rated and functional) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
3.	Tanks, Vaults, Storage Vessels <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____ _____	

4.	Discharge Structure and Appurtenances	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance	Remarks _____ _____
5.	Treatment Building(s)	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored	Remarks _____ _____
6.	Monitoring Wells (pump and treatment remedy)	<input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A	Remarks _____ _____
D. Monitoring Data			
6.	Monitoring Data	<input checked="" type="checkbox"/> Is routinely submitted on time <input checked="" type="checkbox"/> Is of acceptable quality	
7.	Monitoring data suggests:	<input checked="" type="checkbox"/> Groundwater plume is effectively contained <input checked="" type="checkbox"/> Contaminant concentrations are declining	
D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)	<input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells located <input checked="" type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A	Remarks <u>Some maintenance issues, one well unlocked.</u> _____
X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A.	Implementation of the Remedy		

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Remedy is to control human exposure and monitor for natural attenuation. Remedy is generally being implemented as expected, and is operational and functional.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

O&M is generally adequate, but there are areas for improvement. Some recommendations and follow-up actions are necessary to ensure long-term protectiveness.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

None.

D. Opportunities for Optimization

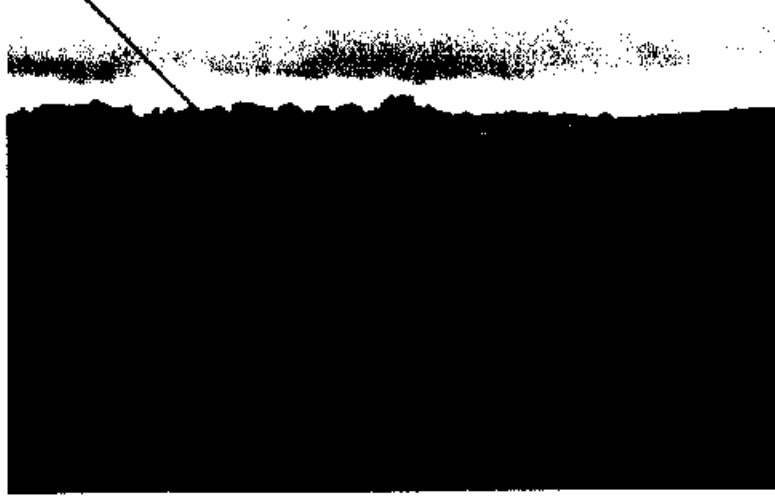
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Improvement program has addressed most optimization possibilities consistent with land use/public protection.

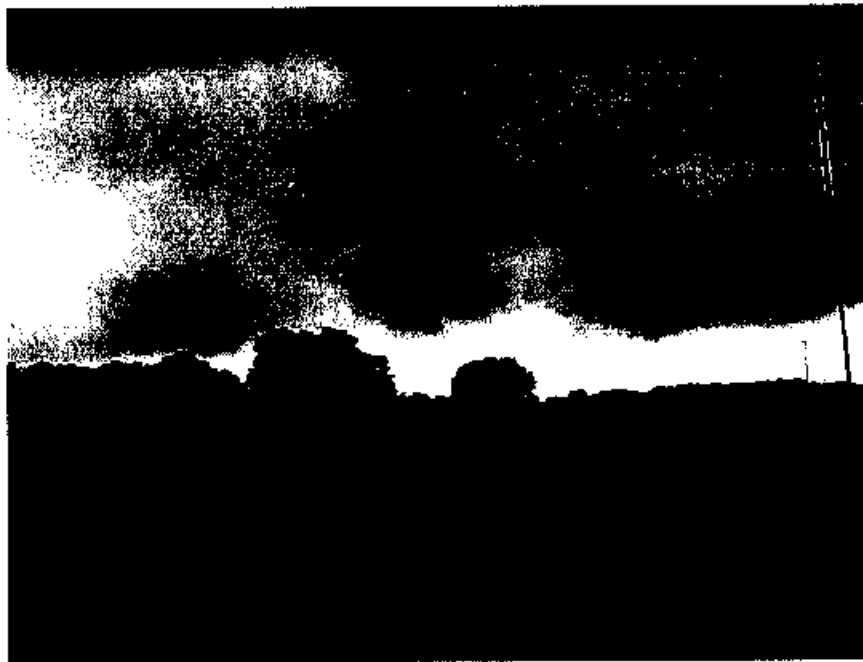
Plan for 2005 to replace/upgrade gas collection system for Hillsborough Heights landfill, including gas collection and treatment system, potentially eliminating need for flare with larger turbine system.

ATTACHMENT 4
SITE PHOTOGRAPHS

Grass cover



Taylor Road Landfill: Side slope with well-established grass cover.



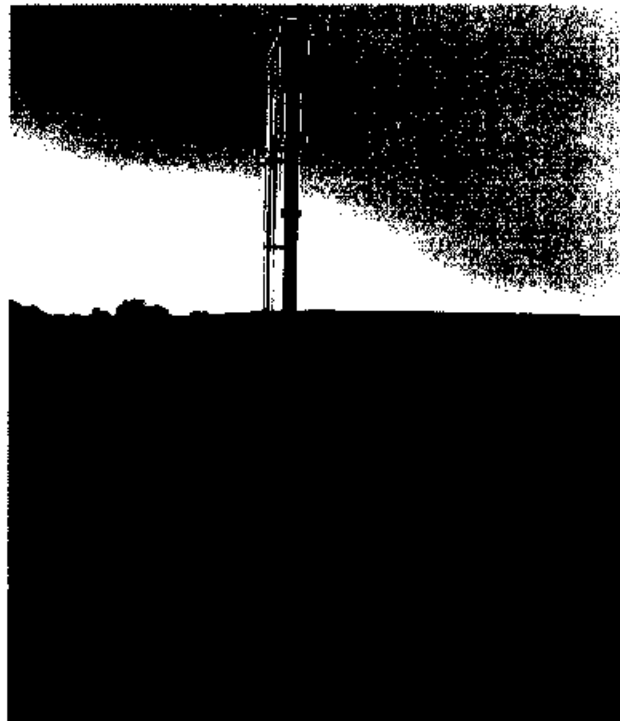
Taylor Road Landfill: Drainage along toe.

Vegetation re-establishing on topsoil



Taylor Road Landfill:
Improvement/regrading of
drainage adjacent to FDOT
Landfill.

**Taylor Road and
Hillsborough
Heights Landfills:**
Flare for combined
flow landfill gas
recovery system.





Taylor Road Landfill: Deep monitoring well with protective casing and dedicated sampling system.



Taylor Road Landfill: Top of unused shallow monitoring well. *Note: nearly at grade.*

ATTACHMENT 5
INTERVIEW RECORDS

Taylor Road Five Year Review Questions

1. What is your overall impression of the project?
2. What effects have the site operations had on the surrounding community?
3. Are you aware of any community concerns regarding the site, its operation or the administration?
4. Are you aware of any vandalism, trespassing or emergency responses from local authorities?
5. Are you or your neighbors using groundwater from the area? If so, how are you using it, and are you aware of any problems with groundwater?
6. Do you feel well informed about the site's activities/progress?
(Technical/Operators - Have there been routine communication/activities? If so, what were they and what were they in reference to?)
7. Do you have any complaints?
(Technical/Operators - Have there been any complaints, violations or other incidents related to the site requiring a response by your office? If so, give details of event(s) and results of responses.)
8. Do you feel well informed about the site's activities and progress?
9. Do you have any comments, suggestions, or recommendations regarding the site?
(Technical/Operators - Do you have any comments, suggestions, or recommendations regarding the site's management or operation?)

Technical/Operations

10. What is the current status of the operation?
11. Have any problems been encountered which required, or will require, changes to this remedial design or the ROD?
12. Have there been any problems or difficulties with the implementation of the remedy?
13. Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy?
14. Have there been unexpected O & M difficulties or costs at the site?
15. Have there been opportunities to optimize O&M, or sampling efforts?

INTERVIEW DOCUMENTATION FORM

The following is a list of individual interviewed for this five-year review. See the attached contact record(s) for a detailed summary of the interviews.

<i>William Kane</i>	<i>Sr. Counselor</i>	<i>10/11/2006</i>	<i>6-19-03</i>
Name	Title/Position	Organization	Date

Name	Title/Position	Organization	Date

Name	Title/Position	Organization	Date

Name	Title/Position	Organization	Date

Name	Title/Position	Organization	Date

Name	Title/Position	Organization	Date

INTERVIEW RECORD			
Site Name: <u>Taylor Road Landfill</u>		EPA ID No.:	
Subject: <u>Sy- Review</u>		Time: <u>1:00 PM</u>	Date:
Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing	
Location of Visit: <u>Taylor Rd Landfill</u>			
Contact Made By:			
Name: <u>Dunkley / Boyd</u>		Title: <u>RPM / CC</u>	Organization:
Individual Contacted:			
Name: <u>Wayne Rose</u>		Title: <u>Sr. Crew leader</u>	Organization:
Telephone No:		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>Traveled along fence line to ensure no burning / sorting. They have worked on odor control. Gas has no scent from high levels. It is threated out in sections In process of building up areas of erosion. Bring in out frequently as needed. No fertilizers or pesticides used.</p>			

INTERVIEW RECORD

Site Name: <u>Taylor Road Landfill</u>		EPA ID No.:	
Subject: <u>5-year Review</u>		Time:	Date: <u>6/26/81</u>
Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit <input type="checkbox"/> Other		Incoming <input type="checkbox"/> Outgoing <input type="checkbox"/>	
Location of Visit: <u>Home of Oberhans</u>			
Contact Made By:			
Name: <u>L. Tanya Spencer</u>	Title: <u>CIC</u>	Organization:	
Individual Contacted:			
Name: <u>Carl Oberhans</u>	Title:	Organization: <u>Taylor Div. Road Dept.</u>	
Telephone No:	Street Address:		
Fax No:	City, State, Zip:		
E-Mail Address:			

Summary Of Conversation

County comes & check wells, but they are still on private wells.
 Mercury was shown in private wells & they were located up to county water - one a few houses (Voc.)
 Compliance store next to site => Marathon - mercury found on property
 Dr. Sam Lepchurich, consultant, says nothing.
 approved burrow pit across ff Taylor Rd site.
 Burrow pit was permitted - but hasn't been tested.
 No smells of gas - corrected gas coming into homes
 After hooking up to county water, but doesn't check private wells any more. - water comes from aquifer

Where is the mercury coming from?
 County does a good job on keeping informed about activities & Solid Waste waste problems.
 Oil & grease was in wells & tested. Not coming from landfill. - so not corrected (said it was leaks)

ignores issues & expect them to go away.
At checking wells that are

frames w/ children & low pH - not their responsibility & 4 should
does not test anymore } be 7

filters are on wells b/c of contamination
No records of dumping by county in 1981
of grease/oil reclassified as solid waste
sludge
DEK (now DEP) made them shut it down

Why are there no records of grease/oil sludge
at Solid Waste Dept.?

Clay cap is not impervious - leachates are happening
but county is pumping it - What happens
if the county can't pump it?
How long will county pump it? forever
& tax payers are paying for it.

INTERVIEW DOCUMENTATION FORM

The following is a list of individual interviewed for this five-year review. See the attached contact record(s) for a detailed summary of the interviews.

ANDREW BALLEW	ENV I SAC	HILL COUNTY WASTE	6-23-03
Name	Title/Position	Organization	Date

DEBBIE ZALOW	ENV I SPE	HILL COUNTY WASTE	6-20-03
Name	Title/Position	Organization	Date

Name	Title/Position	Organization	Date
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Name	Title/Position	Organization	Date
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Name	Title/Position	Organization	Date
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Name	Title/Position	Organization	Date
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INTERVIEW RECORD

Site Name: <u>Taylor Road</u>	EPA ID No.:
Subject: <u>Sur. Review</u>	Time: <u>9:20 AM</u> Date: <u>6/26/03</u>
Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit <input type="checkbox"/> Other	<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing
Location of Visit: <u>Taylor Road Landfill</u>	

Contact Made By:

Name: <u>L. Tony Spence</u>	Title: <u>QIC</u>	Organization:
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Individual Contacted:

Name: <u>Atkinson</u>	Title: <u>Sampling, Etc.</u>	Organization:
Telephone No:	Street Address:	
Fax No:	City, State, Zip:	
E-Mail Address:		

Summary of Conversation

Vagrants on property / Dumping near property
 Only responsible for area around water wells
 Reports anything that they see wrong
 Surface water / monitoring wells are maintained
 No problems.
 No complaints f/ community members.
 Sticklers f/ safety follows QAPP

Taylor Rd Land Fill

6/19/03

INTERVIEW DOCUMENTATION FORM

The following is a list of individual interviewed for this five-year review. See the attached contact record(s) for a detailed summary of the interviews.

<u>DAVID S. ADAMS</u>	<u>Env. or. Mgr.</u>	<u>H.C. S. & S. & S.</u>	<u>6/19/03</u>
Name	Title/Position	Organization	Date
<u>Bill O'Steen</u>	<u>Environmental Scientist</u>	<u>EPA</u>	<u>6/19/03</u>
Name	Title/Position	Organization	Date
<u>Kelsy Hutton</u>	<u>Environmental</u>	<u>FDOP</u>	<u>6/19/03</u>
Name	Title/Position	Organization	Date
<u>DAVID R. KELLY</u>	<u>Environmental Mgr.</u>	<u>SWMD</u>	<u>6/19/03</u>
Name	Title/Position	Organization	Date
<u>Patricia U. Barry</u>	<u>Landfill Supv. Section Mgr.</u>	<u>SWMD</u>	<u>6/19/03</u>
Name	Title/Position	Organization	Date
<u>W. Dennis Krueger</u>	<u>EPA RPM</u>	<u>RY/WMID</u>	<u>6/19/03</u>
Name	Title/Position	Organization	Date
<u>L. Tonya Spencer</u>	<u>EPA CIO</u>	<u>RY/WMID</u>	<u>6/19/03</u>
Name	Title/Position	Organization	Date

INTERVIEW RECORD			
Site Name: <u>Taylor Road Landfill</u>		EPA ID No.:	
Subject: <u>5 Year Review</u>		Time:	Date: <u>6/6/03</u>
Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit <input type="checkbox"/> Other	<input type="checkbox"/> Interview <input type="checkbox"/> Follow-up		
Location of Visit: <u>County Office (Holtzman)</u>			
Contact Made By: <u>David Kunkler</u>			
Name: <u>L. Tony Springer</u>	Title: <u>RMA/OTC</u>	Organization: <u>EPA</u>	
Individual Contacted:			
Name: <u>Les Hinkel</u>	Title:	Organization:	
Telephone No:		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
Notes and documentation from attached			

Jaylen Road - 5 year review

6/12/03

Property is becoming more valuable.

36 feet sold - for bldg entrance - Well F-2

trying to get well relocated to other side
damaged about 5 feet down.

Wells - some date back to late 70's early 80's

No contractor - County handles everything w/
a team of people - contracted out of sampling
Edat. - hyper extension

- ~~Done~~ -

for 5 months no contact

Cam will call if she has questions

Cam gets copies of ADRs & Reparatory

gets copies as well

Construction improvements - sent to board

Copy of info faxed to Cam.

- No

Cam's main concern Travel Ctr/Redevelopment

- County is more of a buffer opposed to
insurance.

- SOPs requires labs to report below
certified levels.

- Letters to private homeowners to explain new
contaminants that may show up. No
response to letter just yet.

- Relative / Standard comparisons may
be understood by Cam.

6/19/03

- Deals on property of TA Travel Ctr &
^{many} ~~later~~ fact.
 Wicks are located below this area
 They need to see their data reports
 Wicks/Kennaff
 They are on county water distribution
 lines.

- TA Travel Ctr wants to expand parking
 area to north & they were denied
 by City b/c of possible stormwater
 runoff.

well

1.

2.

State of Florida)
County of Hillsborough) ss:

Believe the undersigned authority personally approved T. Fugh, who on oath says that she is Advertising Manager Supervisor of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida, that the attached copy of advertisement being a

LEGAL NOTICE

is the number of

U.S. ENVIRONMENTAL PROTECTION

was published in said newspaper in the name of _____ JUNE 18, 2003

Affiant further says that she sold The Tampa Tribune a newspaper published in Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement, and Affiant further says that she had neither nor now furnished any person, this advertisement for publication in the said newspaper.

Sumner is now subscribed by me, dated _____ 19____
at _____ JUNE _____ A.D. 2003

Personally Known ☒ or Produced Identification
Type of Identification Produced _____

John Lee White

U.S. FARMER MENTAL
HEALTH: A NATIONAL
SURVEY OF
FARMER MENTAL
HEALTH

The United States Government is authorized to reproduce and distribute reprints for government purposes, not withstanding any copyright notation that may appear hereon.

1. **PROCESSES** - The processes of the system are the activities that are performed by the system. These processes are the activities that are performed by the system to achieve the system's goals. The processes of the system are the activities that are performed by the system to achieve the system's goals.

As a part of the cleanup, the Army is removing 200,000 lb of hazardous waste from the site. The waste is being placed in a new, secure container. The Army is also removing 100,000 lb of hazardous waste from the site. The waste is being placed in a new, secure container. The Army is also removing 100,000 lb of hazardous waste from the site. The waste is being placed in a new, secure container.

If you have any questions, please contact us at 1-800-368-2772 or visit our website at www.3m.com.

1-800-451-7243

L. T. ...
 ...
 ...
 ...
 ...

[illegible]

APPENDIX A

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMENTS



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

September 19, 2003

Mr. David Keefer
USEPA, Region IV
Atlanta Federal Center
61 Forsyth St., SW
Atlanta, GA 30303-8960

Dear Mr. Keefer:

FDEP has reviewed the draft July 2003 Five-Year Review (Review) for the Taylor Road Landfill Superfund site along with the June 27, 2003 Taylor Road Landfill Groundwater Quality Statistical Evaluation. The following is based on comparison of the remedy as defined in the original September 1995 Record of Decision (ROD) and the Remedial Action Objectives identified therein. As stated in the Review, the DEP did not concur with the ESD, which we assert inappropriately eliminated Florida's Secondary drinking water standards as an ARAR for the site and inappropriately used an ESD to fundamentally changed the site remedy.

The Five-Year Review concludes that the remedy currently protects human health and the environment because groundwater monitoring at the ring of wells ensures contingent measures can be taken prior to impacts to domestic wells; institutional controls restrict the installation of new domestic supply wells in the impacted area; RCRA post closure care of the landfill minimizes impacts to the aquifer; and monitoring indicates that natural attenuation is occurring. The Review makes specific recommendations for actions that should be taken in order to assure its continued protectiveness including repair and enforcement of access controls; improved routine maintenance of monitoring wells; conducting a potable well survey to ensure the effectiveness of the current institutional controls; continued long term O&M of the landfills; re-establishment of annual groundwater statistical evaluations; and improved responsiveness to ongoing community concerns.

Based on the current groundwater data, we agree that the remedy is currently protective of human health and environment, as defined by the original 1995 ROD. Future monitoring will show if the remedy remains protective and that adequate mechanisms are in place to ensure that exposure to site-related contamination does not occur. While it has been necessary to expand the compliance ring of wells 3 times since implementation of the remedy due to exceedances in primary and secondary standards; the most recent

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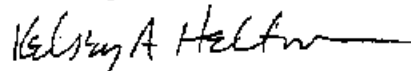
Taylor Road Landfill Superfund site
Five-Year Review
September 19, 2003
Page 2 of 2

(April 2003) monitoring results indicate that groundwater in the Ring Wells do not exceed primary or secondary drinking water standards or State groundwater cleanup target levels for site-related contaminants. As FDEP noted during the Five-Year Review process, Manganese continues to be above Florida's secondary standards in 9 of 13 Interior Wells, excluding the background well (F-12), which shows a concentration of 0.063 mg/l. Of particular note are the continued elevated levels of Manganese in F-1A (0.190 mg/l), a former Ring Well northwest of the site, along with the documented trend of increasing Manganese concentrations in Interior Wells C-6 and F-2 in zone I-1.

We strongly support the recommendation to update the potable well survey to confirm the adequacy of the existing institutional controls in preventing public exposure to site related contaminants. Newly identified private wells should be included in the Taylor Road private well monitoring program. We understand from the July 2003 Hillsborough Heights Domestic Supply Well Data Report that the County intends to repair the electrical control systems on private wells P-1A and P-4 so that monitoring of these domestic wells can resume in September 2003.

Thank you for providing FDEP with the opportunity to participate in the Superfund Five-Year Review for this site. We understand that FDEP's comments will be appended to the final Five-Year Review Report.

Sincerely,



Kelsey A. Helton
Environmental Manager
Hazardous Waste Cleanup

WMD/SSMB
RECEIVED

SEP 23 2003

EPA-REGION 4
ATLANTA, GA